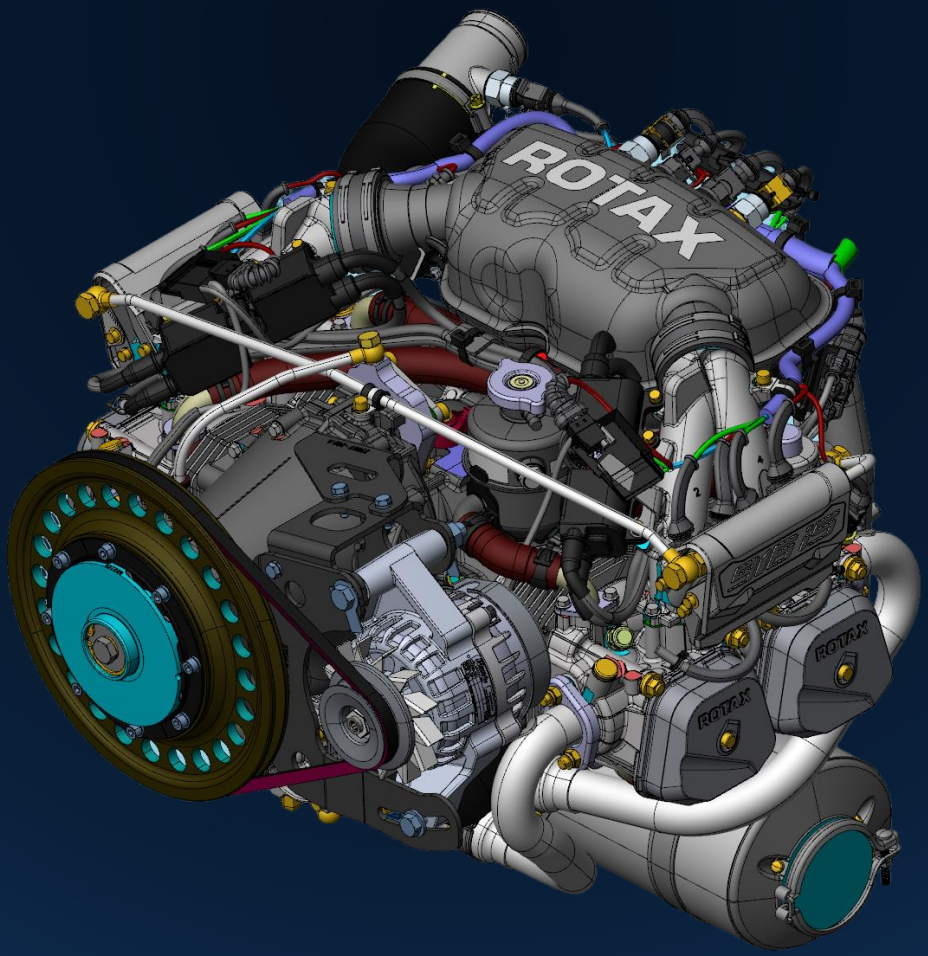
Installation / Operation Manual

External Alternator Series 70A for BRP Rotax Aircraft Engines



Issue: 1.0

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1. Preface

Thank you for purchasing an RS Flight Systems External Alternator Kit. We are pleased that you have chosen our product and are confident that it will meet all your expectations. In case of questions or problems with the unit, feel free to contact us:

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2. System Description

The **External Alternator Series 70A** for BRP Rotax Aircraft Engines comprises several kits:

	Description	PN Alternator Kit	PN Mounting Kit	Additional Compatible Engine Types
1	Ext. Alternator Kit 70A Rotax 912ULS	12-002	27005-831	912 and 912S
2	Ext. Alternator Kit 70A Rotax 912iS	10-758	26006-051	914
3	Ext. Alternator Kit 70A Rotax 915iS	10-516	27007-286	
4	Ext. Alternator Kit 70A Rotax 916iS	12-190	27011-786	
5	Ext. Alternator Kit 70A Bank1 Rotax 912iS	12-231	27011-771	914
6	Ext. Alternator Kit 70A Bank 1 Rotax 915iS	12-702	27011-805	
7	Ext. Alternator Kit 70A Bank 1 Rotax 916iS	12-703	27011-803	
8	Ext. Double Alternator Kit 2x 70A Rotax 912iS	12-323	27005-871	914
9	Ext. Double Alternator Kit 2x 70A Rotax 915iS	12-568	27014-001	
10	Ext. Double Alternator Kit 2x 70A Rotax 916iS	12-704	27011-801	

Table 2-1: Overview Alternator and Mounting Kits

PN Alternator 70A: 26005-927
PN Regulator: 10-358

The **External Alternator Series 70A** can be operated in 14 VDC and 28 VDC mode. The system is fitted with a special transmission ratio to achieve about 50 % of the nominal power at 1800 rpm crankshaft speed (idle), whereas full power is available above 4000 rpm. The high-performance belt drive in combination with the Hartzell alternators leads to a high system efficiency of about 75 %.

The external alternator kits can be operated as single alternator kits, such as the **Ext. Alternator Kit 70A Rotax 915iS** shown in **Figure 2-1**, or as double alternator kits, such as the **Ext. Double Alternator Kit 2x 70A Rotax 915iS** shown in **Figure 2-2.**

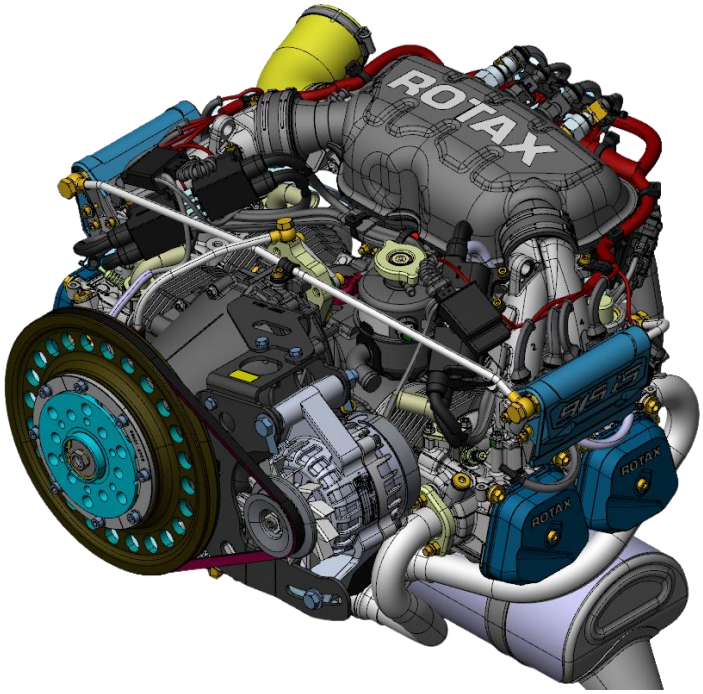

Figure 2-1 Ext. Alternator Kit 70A Rotax 915iS

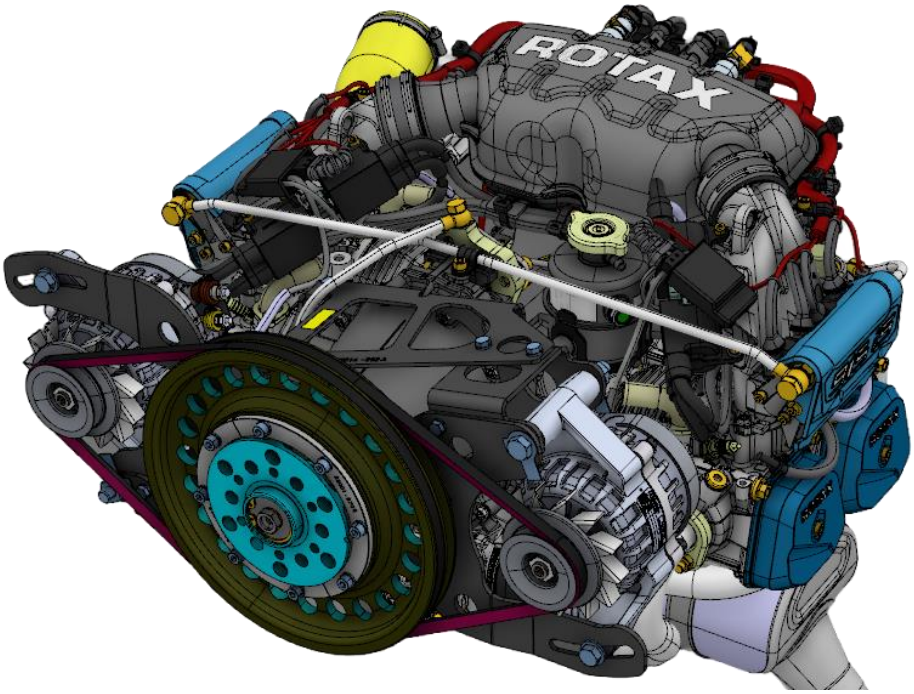

Figure 2-2: Ext. Double Alternator Kit 2x 70A Rotax 915iS

3. Technical Specifications Overview

The technical specifications of the **External Alternator Series 70A** for BRP Rotax Aircraft Engines are listed in **Table 3-1**.

	Description	PN Alternator Kit	Weight	Current Power	Position
1	Ext. Alternator Kit 70A Rotax 912ULS	12-002	8.7 kg / 19.2 lbs	70 A 2 kW (at 28 VDC)	Bank 2
2	Ext. Alternator Kit 70A Rotax 912iS	10-758	8.8 kg / 19.4 lbs	70 A 2 kW (at 28 VDC)	Bank 2
3	Ext. Alternator Kit 70A Rotax 915iS	10-516	8.7 kg / 19.2 lbs	70 A 2 kW (at 28 VDC)	Bank 2
4	Ext. Alternator Kit 70A Rotax 916iS	12-190	8.9 kg / 19,8 lbs	70 A 2 kW (at 28 VDC)	Bank 2
5	Ext. Alternator Kit 70A Bank1 Rotax 912iS	12-231	8.7 kg / 19.2 lbs	70 A 2 kW (at 28 VDC)	Bank 1
6	Ext. Alternator Kit 70A Bank1 Rotax 915iS	12-702	8.7 kg / 19.2 lbs	70 A 2 kW (at 28 VDC)	Bank 1
7	Ext. Alternator Kit 70A Bank1 Rotax 916iS	12-703	8.7 kg / 19.2 lbs	70 A 2 kW (at 28 VDC)	Bank1
8	Ext. Double Alternator Kit 2x 70A Rotax 912iS	12-323	17.8 kg / 39.2 lbs	140 A 4 kW (at 28 VDC)	Bank 1 & 2
9	Ext. Double Alternator Kit 2x 70A Rotax 915iS	12-568	17.8 kg / 39.2 lbs	140 A 4 kW (at 28 VDC)	Bank 1 & 2
10	Ext. Double Alternator Kit 2x 70A Rotax 916iS	12-704	18.0 kg / 39,7 lbs	140 A 4 kW (at 28 VDC)	Bank 1 & 2

Table 3-1: Technical Specifications Alternator Kits

Belt tension: 233 N (equals a force of 25 N when the belt is pushed down 3.63 mm while mounted)
Temp range: up to + 240 °F / + 116 °C

4. General Information for Mechanical Installation

4.1 Mounting Layouts

The **Ext. Alternator Kits 70A** are always mounted to the original Rotax Attachment Points on the Bank 2 side of the engine gearbox (**Figure 4-1**). The **Ext. Alternator Kits 70A Bank1** are intended for installation in combination with the **Ext. Alternator Kits 70A Bank2,** forming the **Ext. Double Alternator Kits 2× 70A**, which are installed on both the Bank 1 and Bank 2 side (**Figure 4-2**).

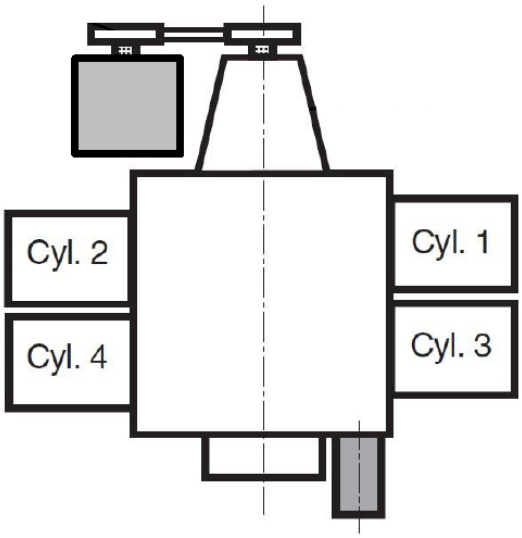

Figure 4-1: Mounting Layout Single Alternator Kit on Bank 2 Side

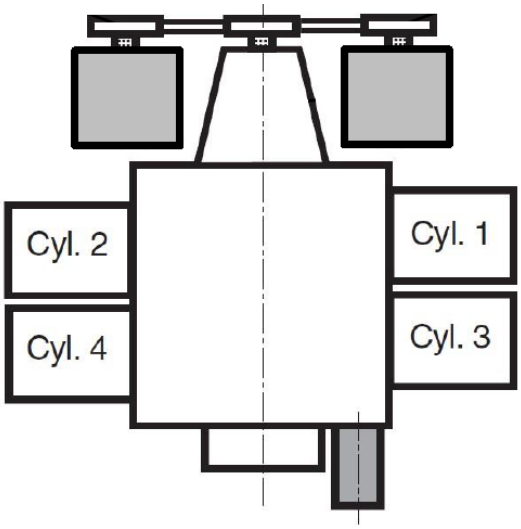

Figure 4-2: Mounting Layout Double Alternator Kit on Bank 1 and Bank 2 Side

4.2 Propeller Flange

The Rotax 912, 912S, 912ULS, 912iS, 914 and 915iS engines have a type **A** flange and therefore all corresponding alternator kits contain the same corresponding **Fixing Pulley** (PN 26001-870).

The Rotax 916iS engine, on the other hand, has a type **R** flange and therefore the corresponding alternator kits come with a different fixing pulley, the **Fixing Pulley 916iS** (PN 26007-829). Note that, while the **Ext. Alternator Kits Rotax 916iS** otherwise contain the same components as the **Ext. Alternator Kits Rotax 915iS**, the PNs of the alternator kits are different due to the different propeller flanges and corresponding fixing pulleys.

4.3 Rotax Attachment Points 912ULS

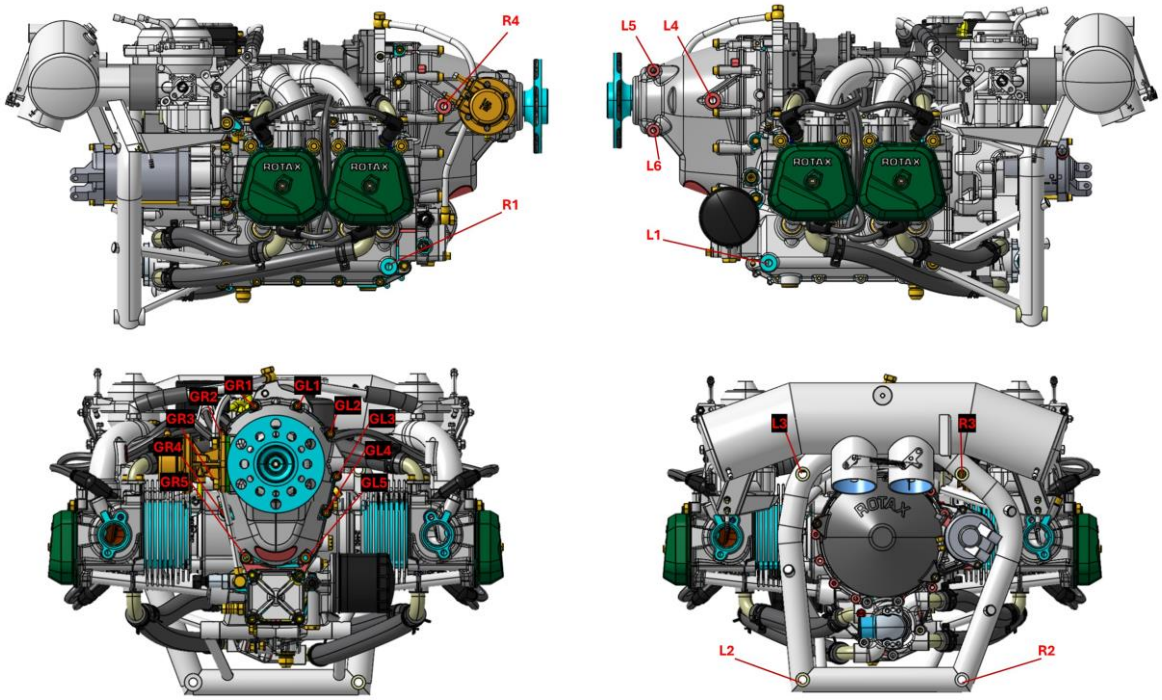

Figure 4-3: Left, Right, Back and Front View Rotax 912ULS Attachment Points

4.4 Rotax Attachment Points 912iS

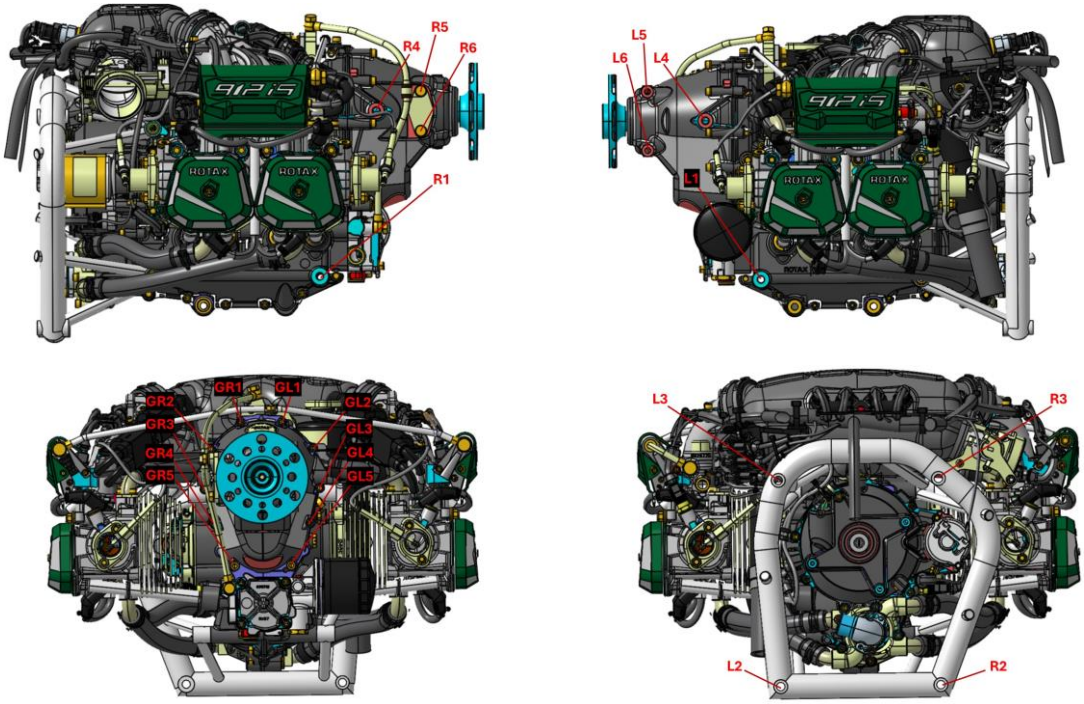

Figure 4-4: Left, Right, Back and Front View Rotax 912iS Attachment Points

4.5 Rotax Attachment Points 915iS

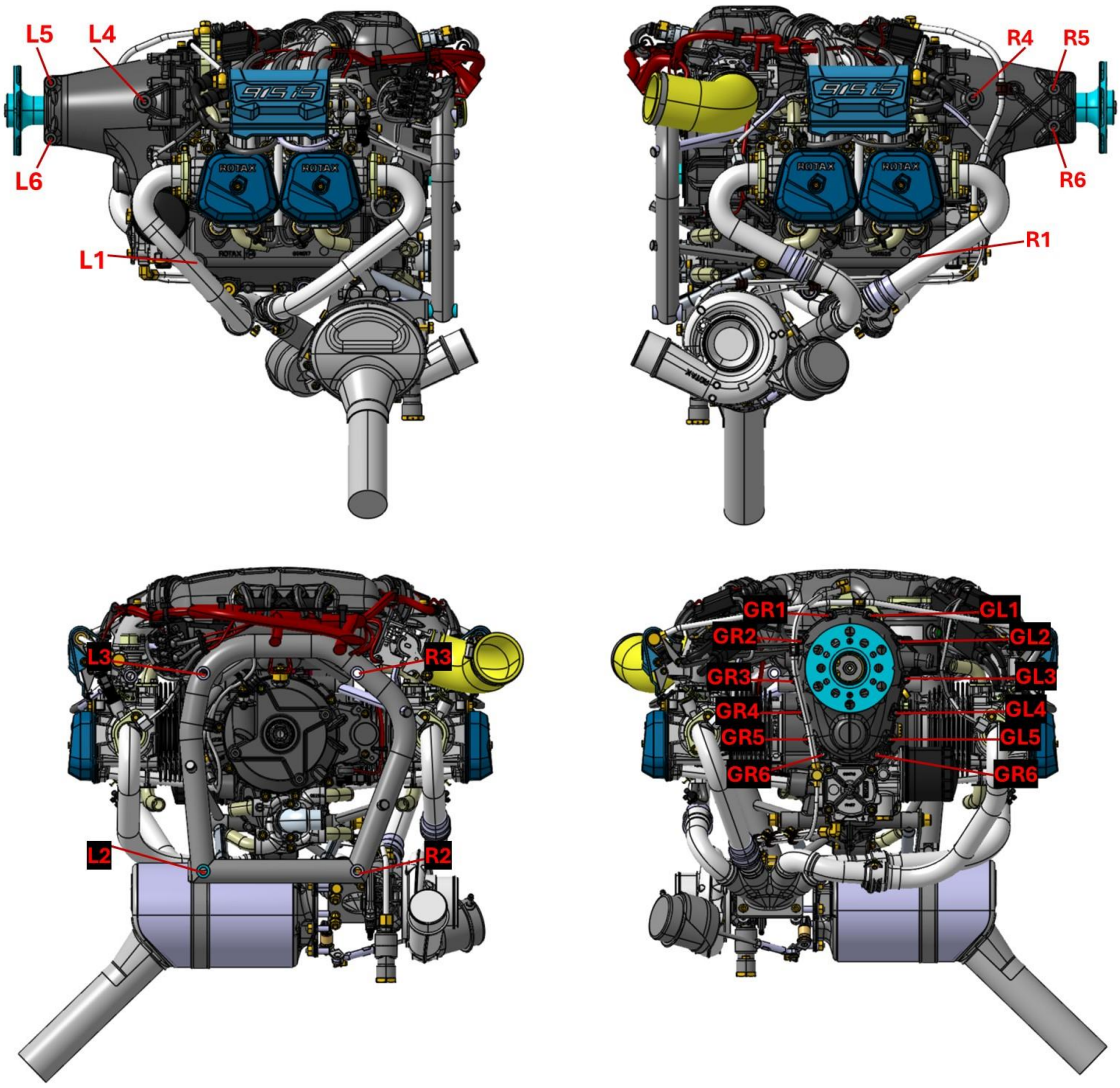

Figure 4-5: Left, Right, Back and Front View Rotax 915iS Attachment Points

4.6 Rotax Attachment Points 916iS

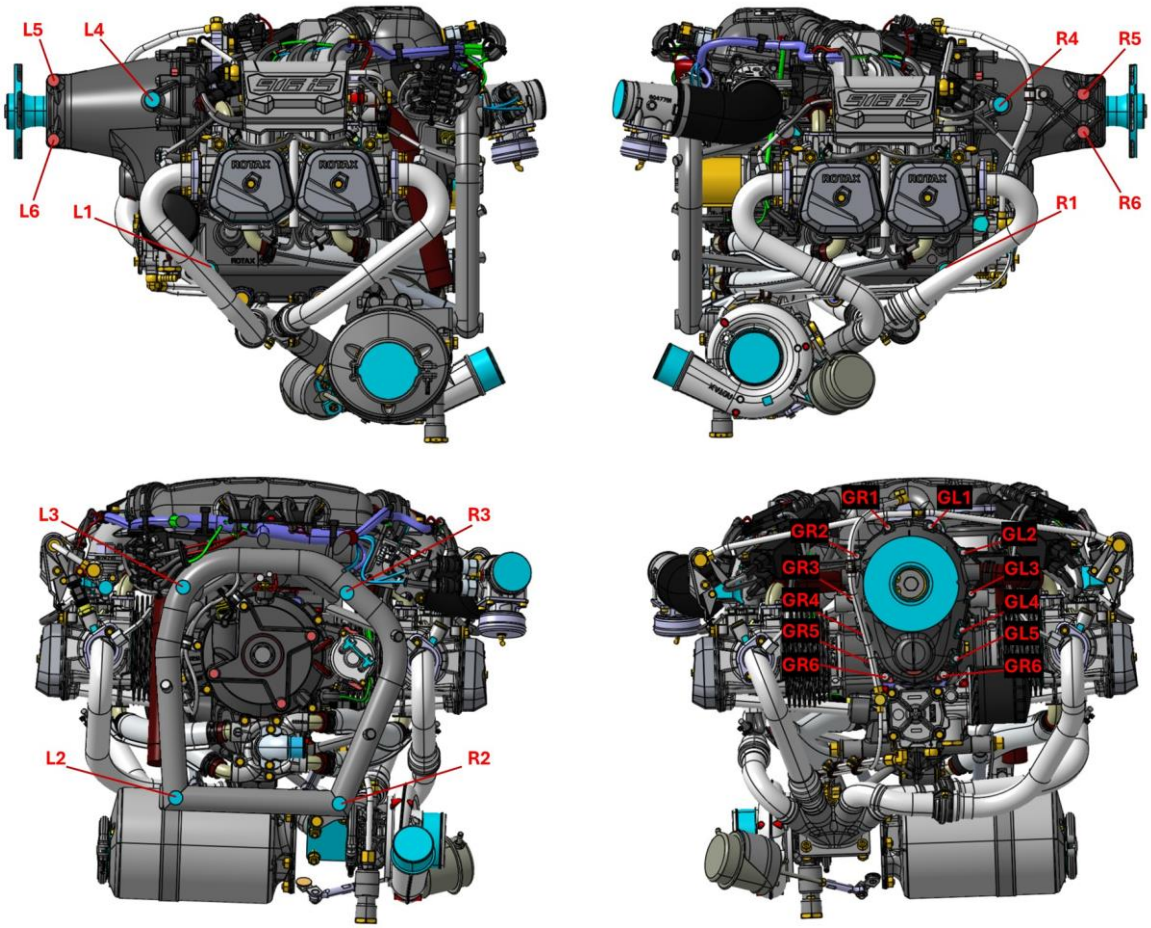

Figure 4-6: Left, Right, Back and Front View Rotax 916iS Attachment Points

4.7 Additional Drawings and Tables

Bolt Type	Torque
All M6 bolts into aluminium	5.9 Nm / 4.3 lbft
All M6 bolts into a nut	7.7 Nm / 5.7 lbft
All M8 bolts into a nut	25 Nm / 18.4 lbft
All UNC 3/8” bolts	40.0 Nm / 29.5 lbft
All UNF 7/16” bolts	65.0 Nm / 47.9 lbft

Table 4-1: Torque Specifications

Note: For all bolts mounted to the Rotax gearbox/engine check the Rotax engine manual for torque specifications. For all bolts mounted to the alternator check the Hartzell manual for torque specifications.

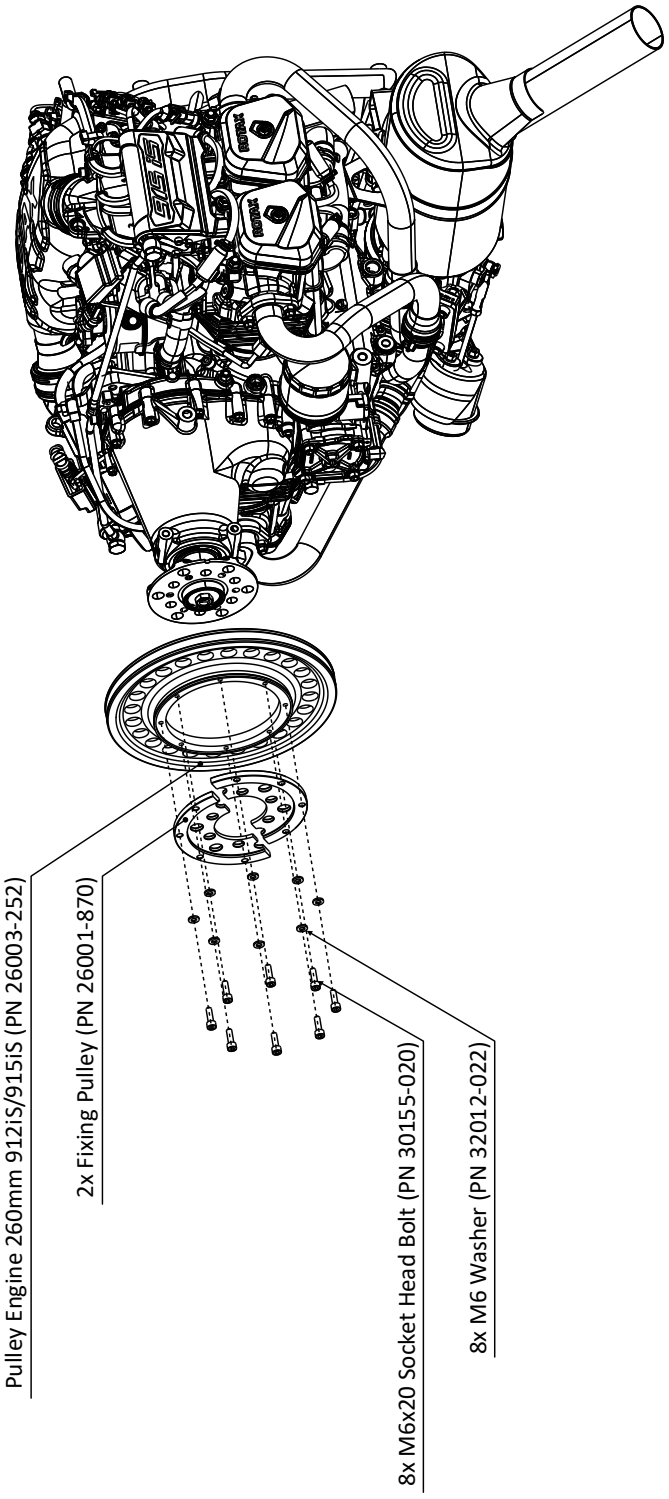

Figure 4-7: Installation Pulley Engine Rotax 915iS

Note: The pulley engine is placed behind the propeller flange and the fixing pulleys between the pulley engine and the propeller flange. **Figure 4-7** shows an exemplary exploded view of the pulley engine installation of the **Ext. Alternator Kit 70A Rotax 915iS**, which is representative of all other alternator kits.

4.8 TBO and TBR Restrictions

There is no time between overhaul (TBO) or lifetime (TBR) restriction on the alternator and regulator. During the 100 h Rotax engine check, a visual inspection must be conducted.

The **V-Belt XPZ 962** (PN 26003-253) has a lifetime of 1000 h (TBR). The tension must be checked every 100 h.

5. Assembly Instructions for the Individual Kits

5.1 Assembly Instructions Ext. Alternator Kit 70A Rotax 912ULS

PN Alternator Kit: 12-002
PN Mounting Kit: 27005-831

1. Mount the **Frame Bracket ALT FLX/ES 912ULS** (PN 27005-817) to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts. Do not tighten the bolts yet.
2. Mount the **Frame Flange ALT ES 912ULS** (PN 27005-834) to the Rotax Attachment Points **L5** and **L6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
3. Mount the **Frame Strut ALT ES 912ULS** (PN 27005-833) to the Rotax Attachment Point **L4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
4. Connect the **Frame Flange ALT ES 912iS** (PN 27005-834) and the **Frame Strut ALT ES 912ULS** (PN 27005-833) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
5. Connect the **Frame Bracket ALT FLX/ES 912ULS** (PN 27005-817) and the **Frame Strut ALT ES 912ULS** (PN 27005-833) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723)**.** Do not tighten the bolts yet.
6. Mount the **Frame Gusset Plate ALT ES 912iS/ULS** (PN 26006-079) between the **Frame Flange ALT ES 912iS** (PN 27005-834) and the **Frame Strut ALT ES 912ULS** (PN 27005-833) with 4x **M5x16 Hexagon Bolts (PN 30004-103)**, 8x **M5 Washer** (PN 32010-005) and 4x **M5 Stop Nut** (PN 27011-724).
7. Tighten all bolts from steps 1-6 and torque them as specified in Table 4-1. Secure the **M10x18 Hexagon Bolt** (PN 30006-385) against the **Frame Strut ALT ES 912ULS** (PN 27005-833) with safety wire. Secure the 2x **M8x18 Hexagon Bolt** (PN 30006-384) against each other with safety wire.
8. Place the **Pulley Engine 260mm 912ULS** (PN 27005-813) behind the propeller flange. Place the 2x **Fixing Pulley** (PN 26001-870) between the **Pulley Engine 260mm 912ULS** (PN 27005-813) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
9. Mount the **Pulley Engine 260mm 912ULS** (PN 27005-813) on the 2x **Fixing Pulley** (PN 26001-870) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
10. Apply battery terminal grease on all connections between the alternator and the bearings.
11. Mount the **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange ALT ES 912iS** (PN 27005-834) and the **Frame Strut ALT ES 912ULS** (PN 27005-833) by inserting 1x **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507), 1x **UNF 7/16”-20 Flat Nut** (PN 27007-506) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.

12. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Pulley Engine 260mm 912ULS** (PN 27005-813) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between **Frame Flange ALT ES 912ULS** (PN 27005-834) and the **Frame Strut ALT ES 912ULS** (PN 27005-833).
13. Mount the **V-Belt XPZ 962** (PN 26003-253) on the **Pulley Engine 260mm 912ULS** (PN 27005-813) and the pre-mounted pulley.
14. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley** (PN 26001-870) mounting holes.
15. Move the **Alternator ES-7024-14** (PN 26005-927) to tense the belt. Fix the position by inserting 1x **UNC 3/8”-16 x3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 912iS** (PN 27005-834) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
16. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange ALT ES 912iS** (PN 27005-834) with safety wire.
17. Tighten and torque the **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
18. Thoroughly check the complete installation.

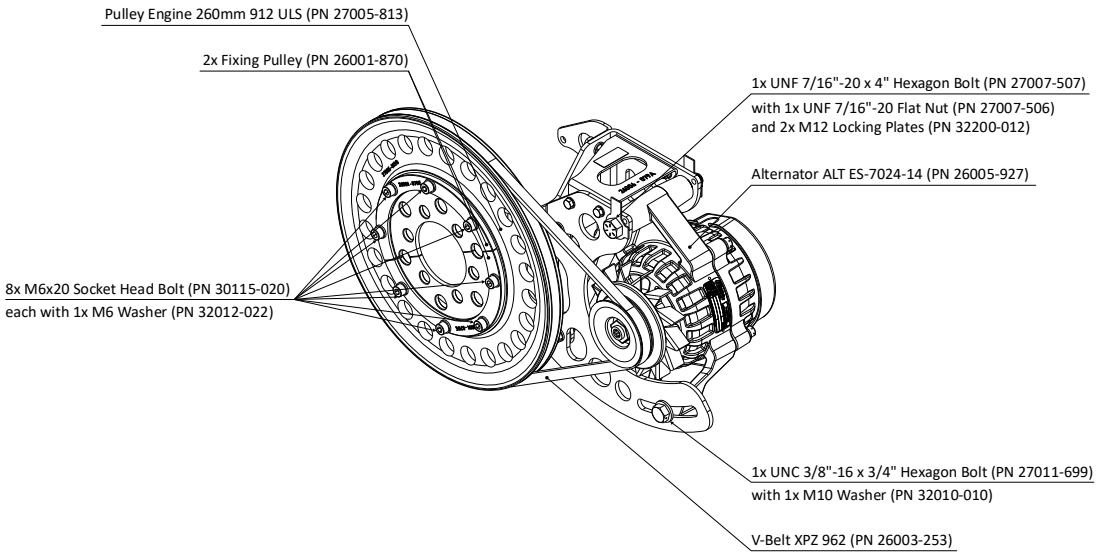

Figure 5-1: Isometric View Ext. Alternator Kit 70A Rotax 912ULS

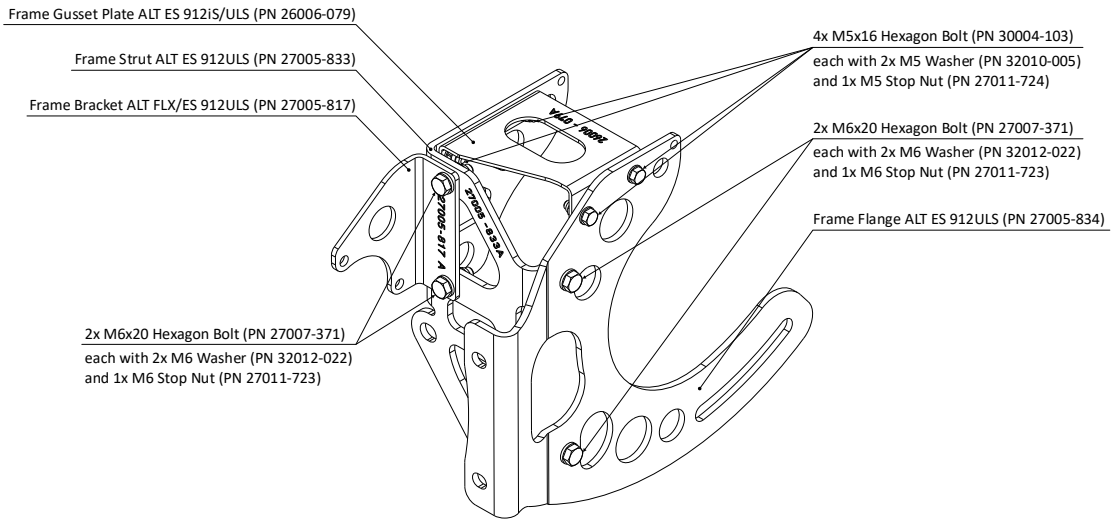

Figure 5-2: Isometric View Ext. Alternator Kit 70A Rotax 912ULS Frames

5.2 Assembly Instructions Ext. Alternator Kit 70A Rotax 912iS

PN Alternator Kit: 10-758
PN Mounting Kit: 26006-051

1. Mount the **Frame Bracket ALT FLX/ES 912iS** (PN 26006-068) to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts. Do not tighten the bolts yet.
2. Mount the **Frame Flange ALT ES 912iS** (PN 26006-054) to the Rotax Attachment Points **L5** and **L6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
3. Mount the **Frame Strut ALT ES 912iS** (PN 26006-053) to the Rotax Attachment Point **L4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
4. Connect the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
5. Connect the **Frame Bracket ALT FLX/ES 912iS** (PN 26006-068) and the **Frame Strut ALT ES 912iS** (PN 26006-053) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
6. Mount the **Frame Gusset Plate ALT ES 912iS/ULS** (PN 26006-079) between the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053) with 4x **M5x16 Hexagon Bolts** (PN 30004-103), 8x **M5 Washer** (PN 32010-005) and 4x **M5 Stop Nut** (PN 27011-724).
7. Tighten all bolts from steps 1-6 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut ALT ES 912iS** (PN 26006-053) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
8. Place the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) behind the propeller flange. Place the 2x **Fixing Pulley** (PN 26001-870) between the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
9. Mount the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) on the 2x **Fixing Pulley** (PN 26001-870) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
10. Apply battery terminal grease on all connections between the alternator and the bearings.
11. Mount the **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053) by inserting 1x **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507), 1x **UNF 7/16”-20 Flat Nut** (PN 27007-506) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
12. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the pre-mounted pulley are in the same plane for proper belt

alignment. The assembly needs to fit tight between the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053).

13. Mount the **V-Belt XPZ 962** (PN 26003-253) on the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the pre-mounted pulley.
14. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley** (PN 26001-870) mounting holes.
15. Move the **Alternator ES-7024-14** (PN 26005-927) to tense the belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 912iS** (PN 26006-054) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
16. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1**.** Secure it against the **Frame Flange ALT ES 912iS** (PN 26006-054) with safety wire.
17. Tighten and torque the **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507) as specified in Table 4-1**.** Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
18. Thoroughly check the complete installation.

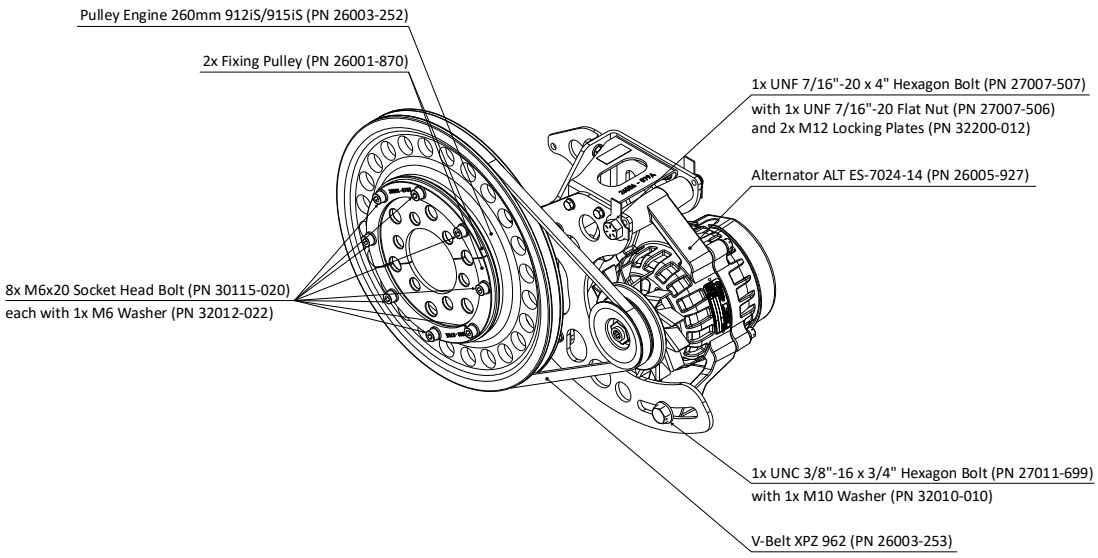

Figure 5-3 : Isometric View Ext. Alternator Kit 70A Rotax 912iS

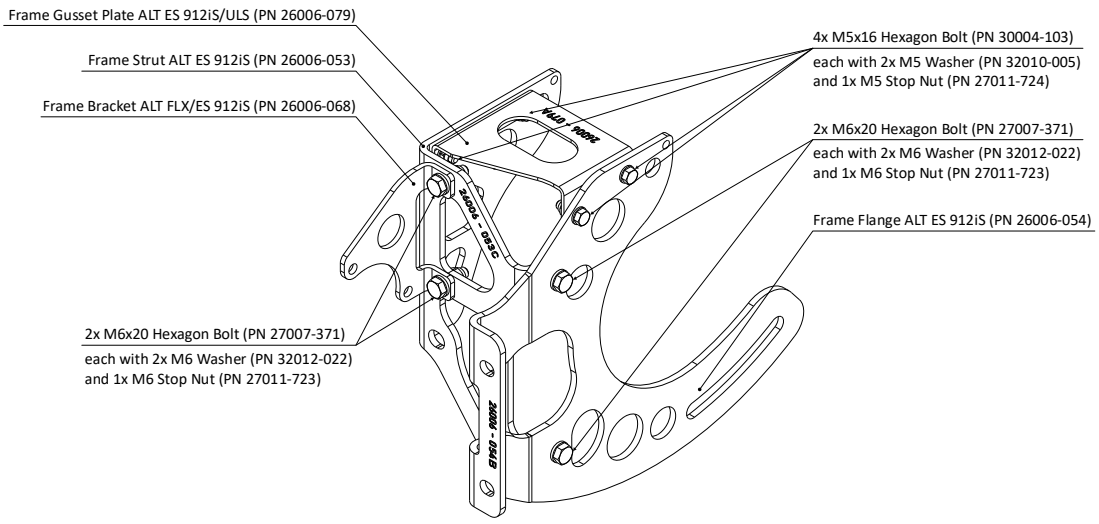

Figure 5-4 : Isometric View Ext. Alternator Kit 70A Rotax 912iS Frames

5.3 Assembly Instructions Ext. Alternator Kit 70A Rotax 915iS

PN Alternator Kit: 10-516
PN Mounting Kit: 27007-286

1. Mount the **Frame Bracket ALT ES 915iS** (PN 27007-289) to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts. Do not tighten the bolts yet.
2. Mount the **Frame Flange ALT ES 915iS** (PN 27007-290) to the Rotax Attachment Points **L5** and **L6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
3. Mount the **Frame Strut ALT ES 915iS** (27007-288) to Rotax Attachment Point **L4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
4. Connect the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
5. Connect the **Frame Bracket ALT ES 915iS** (PN 27007-289) and the **Frame Strut ALT ES 915iS** (27007-288) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
6. Tighten all bolts from steps 1-5 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut ALT ES 915iS** (27007-288) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
7. Place the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) behind the propeller flange. Place the 2x **Fixing Pulley** (PN 26001-870) between the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
8. Mount the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) on the 2x **Fixing Pulley** (PN 26001-870) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
9. Apply battery terminal grease on all connections between the alternator and the bearings.
10. Mount the **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
11. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288).
12. Mount the **V-Belt XPZ 962** (PN 26003-253) on the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the pre-mounted pulley.

13. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley** (PN 26001-870) mounting holes.
14. Move the **Alternator ES-7024-14** (PN 26005-927) to tense the belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
15. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange ALT ES 915iS** (PN 27007-290) with safety wire.
16. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
17. Thoroughly check the complete installation.

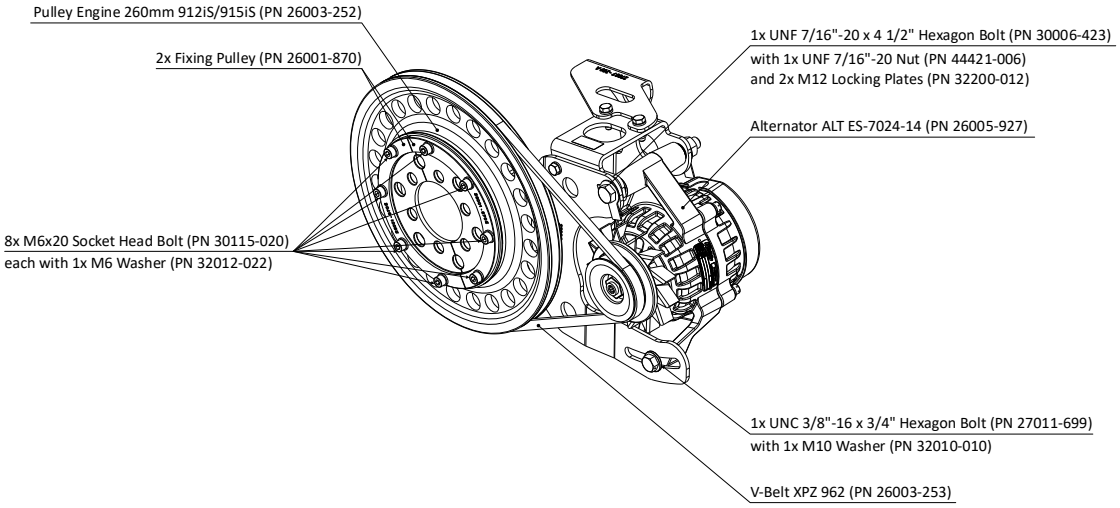

Figure 5-5 : Isometric View Ext. Alternator Kit 70A Rotax 915iS

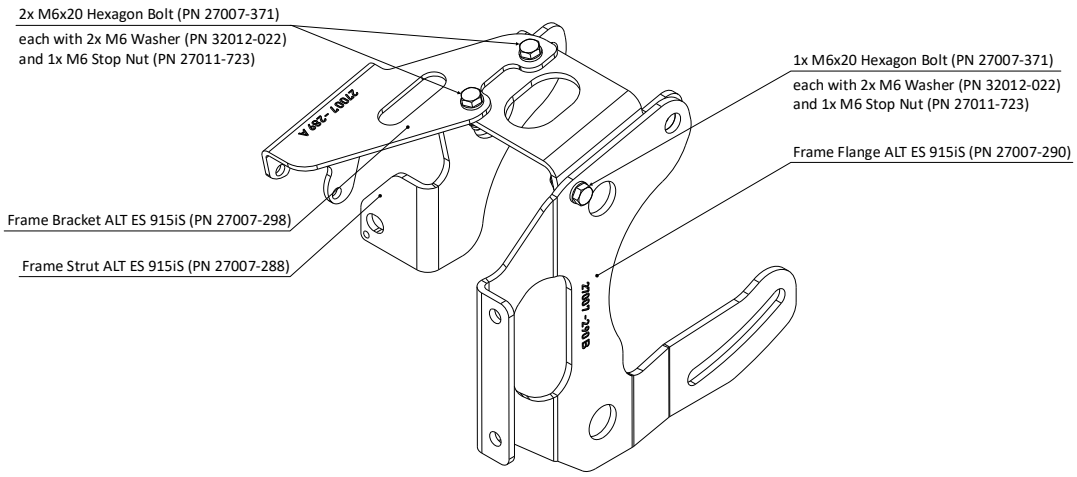

Figure 5-6 : Isometric View Ext. Alternator Kit 70A Rotax 915iS Frames

5.4 Assembly Instructions Ext. Alternator Kit 70A Rotax 916iS

PN Alternator Kit: 12-190
PN Mounting Kit: 27011-786

1. Mount the **Frame Bracket ALT ES 915iS** (PN 27007-289) to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts. Do not tighten the bolts yet.
2. Mount the **Frame Flange ALT ES 915iS** (PN 27007-290) to the Rotax Attachment Points **L5** and **L6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
3. Mount the **Frame Strut ALT ES 915iS** (27007-288) to Rotax Attachment Point **L4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
4. Connect the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
5. Connect the **Frame Bracket ALT ES 915iS** (PN 27007-289) and the **Frame Strut ALT ES 915iS** (27007-288) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
6. Tighten all bolts from steps 1-5 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut ALT ES 915iS** (27007-288) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
7. Place the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) behind the propeller flange. Place the 2x **Fixing Pulley 916iS** (PN 27005-829) between the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
8. Mount the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) on the 2x **Fixing Pulley 916iS** (PN 27005-829) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
9. Apply battery terminal grease on all connections between the alternator and the bearings.
10. Mount the **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
11. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288).
12. Mount the **V-Belt XPZ 962** (PN 26003-253) on the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the pre-mounted pulley.

13. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley 916iS** (PN 27005-829) mounting holes.
14. Move the **Alternator ES-7024-14** (PN 26005-927) to tense the belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
15. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange ALT ES 915iS** (PN 27007-290) with safety wire.
16. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
17. Thoroughly check the complete installation.

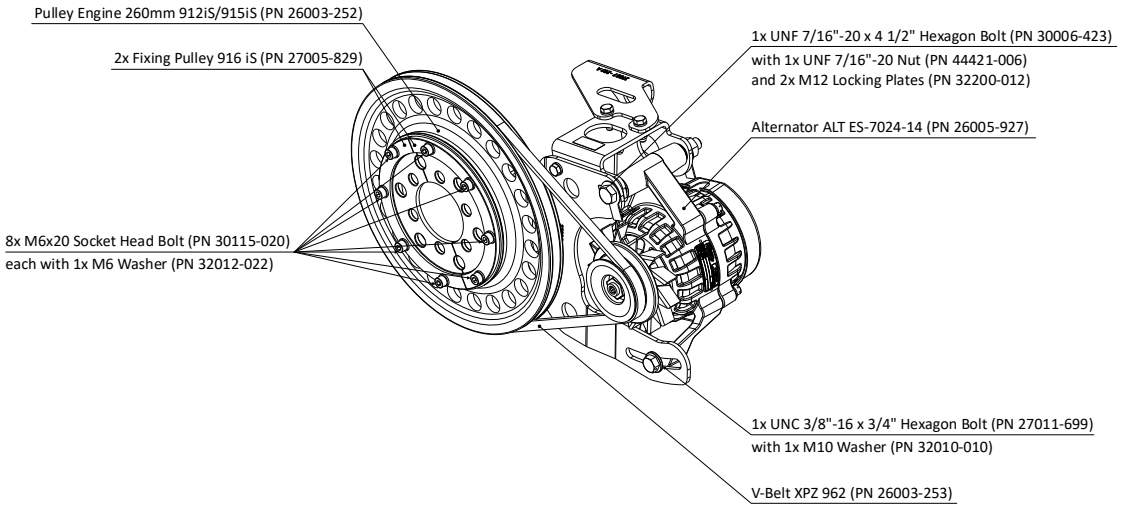

Figure 5-7 : Isometric View Ext. Alternator Kit 70A Rotax 916iS

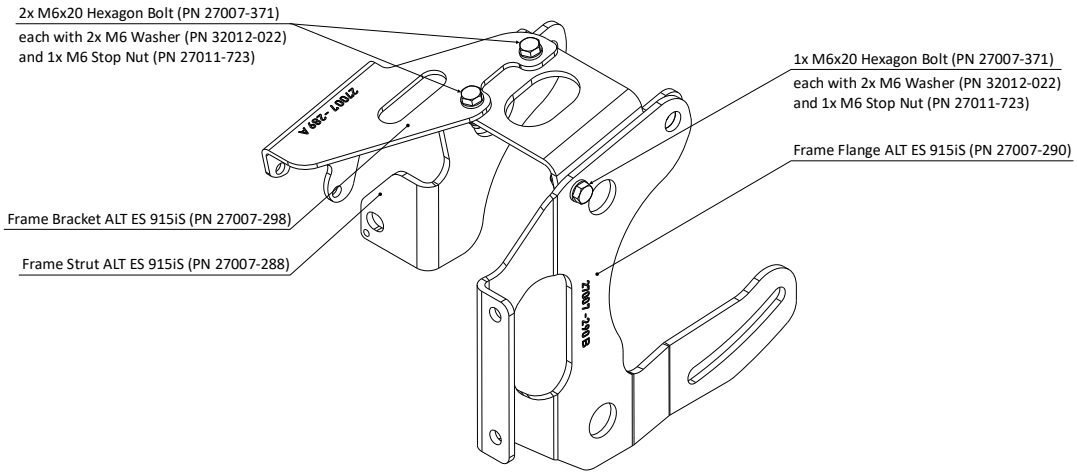

Figure 5-8 : Isometric View Ext. Alternator Kit 70A Rotax 916iS Frames

5.5 Assembly Instructions Ext. Alternator Kit 70A Bank1 Rotax 912iS

PN Alternator Kit: 12-231
PN Mounting Kit: 27011-771

1. Mount the **Frame Bracket Bank1 ALT FLX/ES 912iS** (PN 27005-876) to the Rotax Attachment Points **GR1** and **GR2** with the pre-installed bolts. Do not tighten the bolts yet.
2. Mount the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) to the Rotax Attachment Points **R5** and **R6** with the pre-installed bolts and washers. Do not tighten the bolts yet.
3. Mount the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) to the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with 3x **M6x20 Hexagon Bolt** (PN 27007-371), 6x **M6 Washer** (PN 32012-022) and 3x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet. Connect the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) and the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) to the Rotax Attachment Point **R4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolts yet.
4. Connect the **Frame Bracket Bank1 ALT FLX/ES 912iS** (PN 27005-876) to the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) with 2x **M6x25 Hexagon Bolt** (PN 27011-825), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
5. Mount the **Frame Gusset Plate Bank1 ALT ES 912iS** (27005-877) between the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) with 4x **M5x16 Hexagon Bolt** (PN 30004-103), 8x **M5 Washer** (PN 32010-005) and 4x **M5 Stop Nut** (PN 31500-005).
6. Mount the **Frame Crossbar ALT ES 912iS** (PN 27005-878) to the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). When operating a Double Alternator Kit, additionally connect the **Frame Crossbar ALT ES 912iS** (PN 27005-878) to the Bank 2 side according to the instructions of the corresponding Double Alternator Kit.
7. Tighten all bolts from steps 1-6 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon** (PN 27011-731) against the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with safety wire. Secure the 2x pre-installed bolts on the Rotax Attachment Points **R5** and **R6** against each other with safety wire.
8. Place the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) behind the propeller flange. Place the 2x **Fixing Pulley** (PN 26001-870) between the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
9. Mount the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) on the 2x **Fixing Pulley** (PN 26001-870) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
10. Apply battery terminal grease on all connections between the alternator and the bearings.
11. Mount the **Alternator ES-7024-14** (PN 26005-927) in between the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) by inserting 1x **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507), 1x **UNF 7/16”-20 Flat Nut** (PN 27007-506)

and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.

12. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874).
13. Mount the **V-Belt XPZ 962** (PN 26003-253) on both pulleys on the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley**.**
14. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley** (PN 26001-870) mounting holes.
15. Move the **Alternator ES-7024-14** (PN 26005-927) to tense the belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) with 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
16. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with safety wire.
17. Tighten and torque the **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
18. Thoroughly check the complete installation.

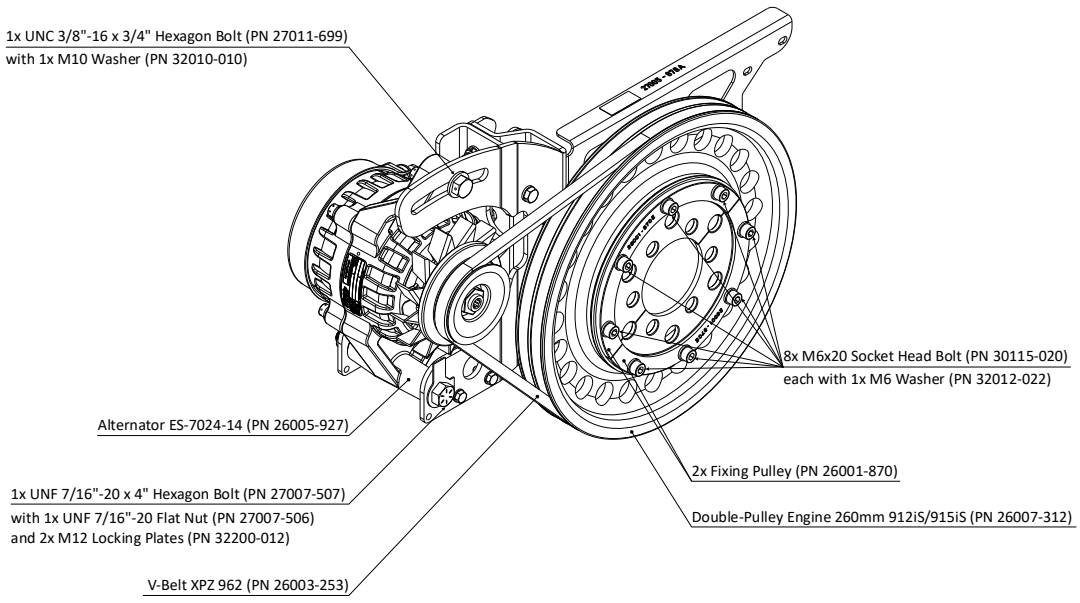

Figure 5-9 : Isometric View Ext. Alternator Kit 70A Bank1 Rotax 912iS

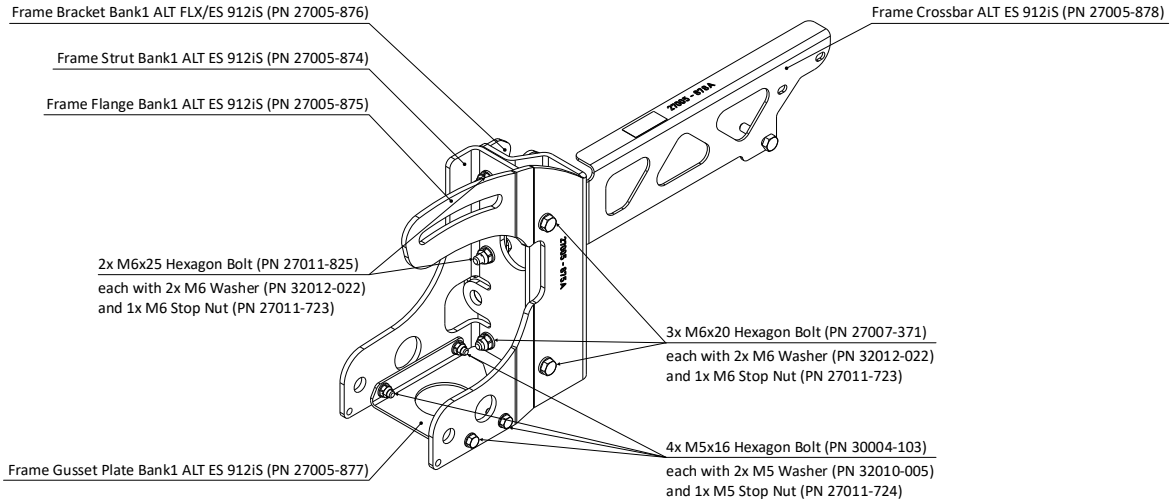

Figure 5-10 : Isometric View Ext. Alternator Kit 70A Bank1 Rotax 912iS Frames

5.6 Assembly Instructions Ext. Alternator Kit 70A Bank1 Rotax 915iS

PN Alternator Kit: 12-702
PN Mounting Kit: 27011-805

1. Mount the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) to the Rotax Attachment Points R**5** and **R6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
2. Mount the **Frame Strut Bank1 ALT ES 915iS** (27014-005) to Rotax Attachment Point **R4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
3. Connect the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
4. Mount the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723), and to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts. When operating a Double Alternator Kit, additionally connect the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the Bank 2 side according to the instructions of the corresponding Double Alternator Kit.
5. Tighten all bolts from steps 1-4 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
6. Place the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) behind the propeller flange. Place the 2x **Fixing Pulley** (PN 26001-870) between the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
7. Mount the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) on the 2x **Fixing Pulley** (PN 26001-870) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
8. Apply battery terminal grease on all connections between the alternator and the bearings.
9. Mount the **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
10. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005).
11. Mount the **V-Belt XPZ 962** (PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley.

12. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley** (PN 26001-870) mounting holes.
13. Move the **Alternator ES-7024-14** (PN 26005-927) to tense the belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
14. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with safety wire.
15. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
16. Thoroughly check the complete installation.

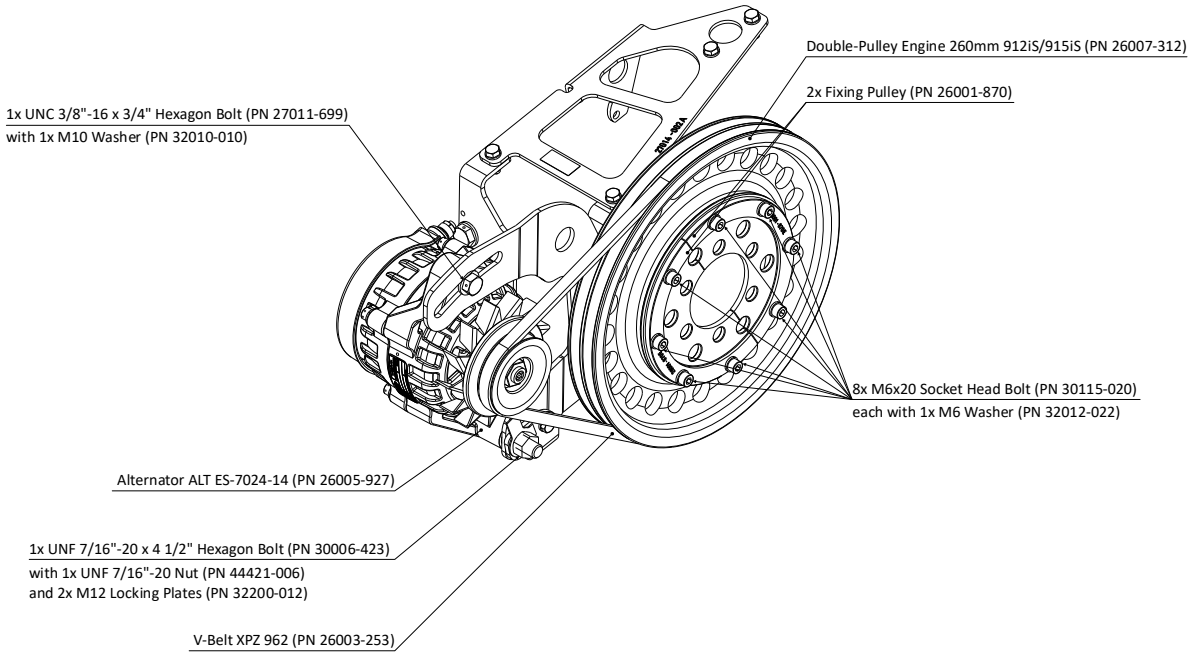

Figure 5-11: Isometric View Ext. Alternator Kit 70A Bank1 Rotax 915iS

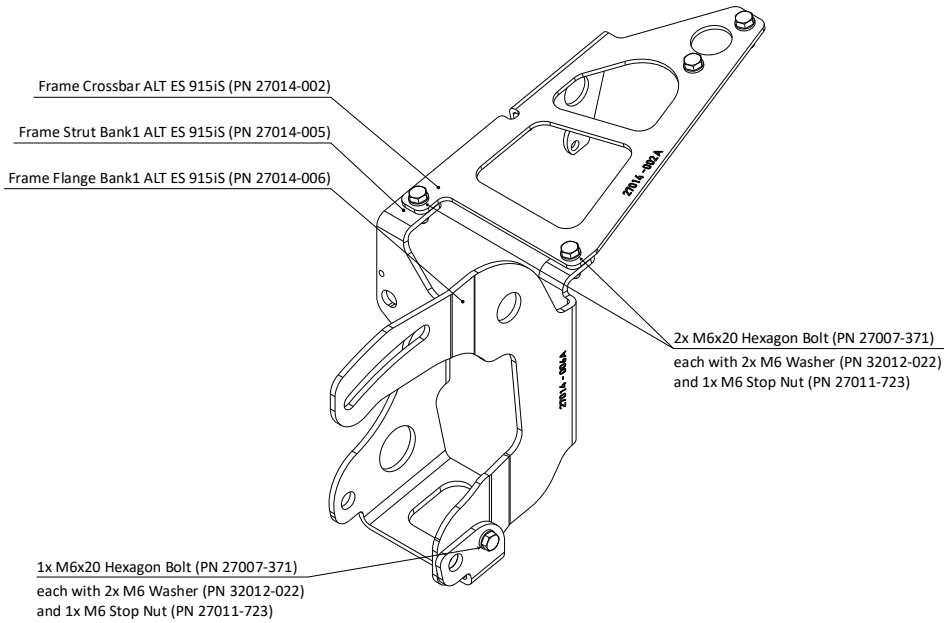

Figure 5-12: Isometric View Ext. Alternator Kit 70A Bank1 Rotax 915iS Frames

5.7 Assembly Instructions Ext. Alternator Kit 70A Bank1 Rotax 916iS

PN Alternator Kit: 12-703
PN Mounting Kit: 27011-803

1. Mount the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) to the Rotax Attachment Points **R5** and **R6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
2. Mount the **Frame Strut Bank1 ALT ES 915iS** (27014-005) to Rotax Attachment Point **R4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
3. Connect the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
4. Mount the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723), and to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts. When operating a Double Alternator Kit, additionally connect the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the Bank 2 side according to the instructions of the corresponding Double Alternator Kit.
5. Tighten all bolts from steps 1-4 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
6. Place the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) behind the propeller flange. Place the 2x **Fixing Pulley 916iS** (PN 27005-829) between the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
7. Mount the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) on the 2x **Fixing Pulley 916iS** (PN 27005-829) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
8. Apply battery terminal grease on all connections between the alternator and the bearings.
9. Mount the **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
10. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005).

11. Mount the **V-Belt XPZ 962** (PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley.
12. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley 916iS** (PN 27005-829) mounting holes.
13. Move the **Alternator ES-7024-14** (PN 26005-927) to tense the belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
14. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with safety wire.
15. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
16. Thoroughly check the complete installation.

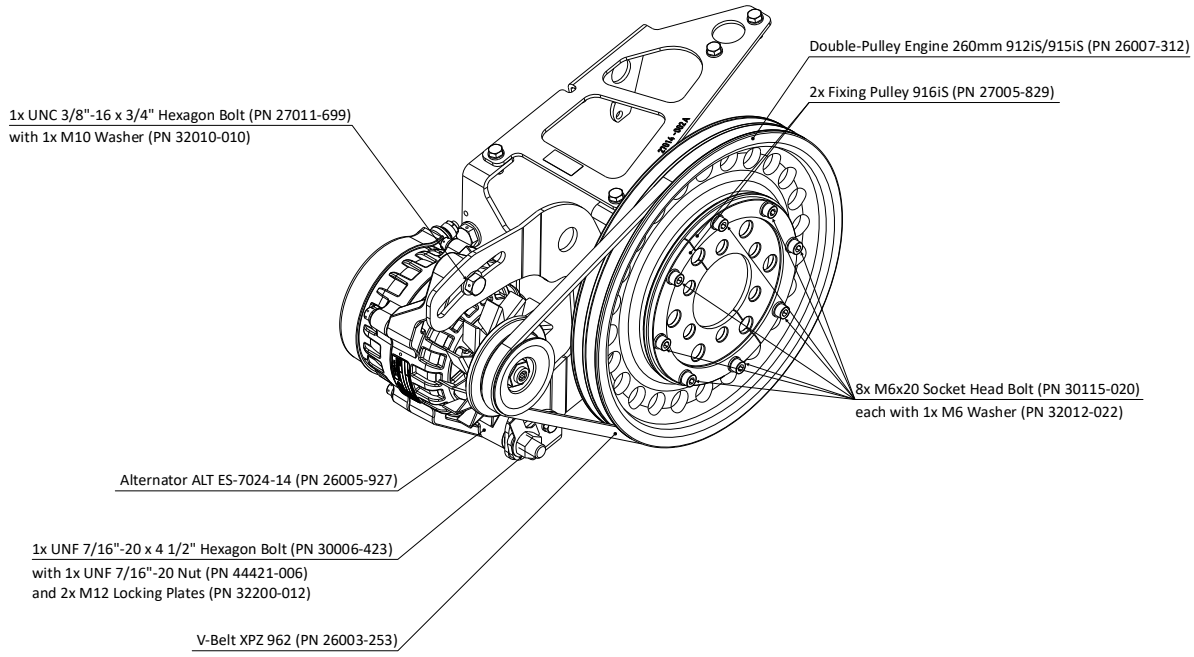

Figure 5-13:Isometric View Ext. Alternator Kit 70A Bank1 Rotax 916iS

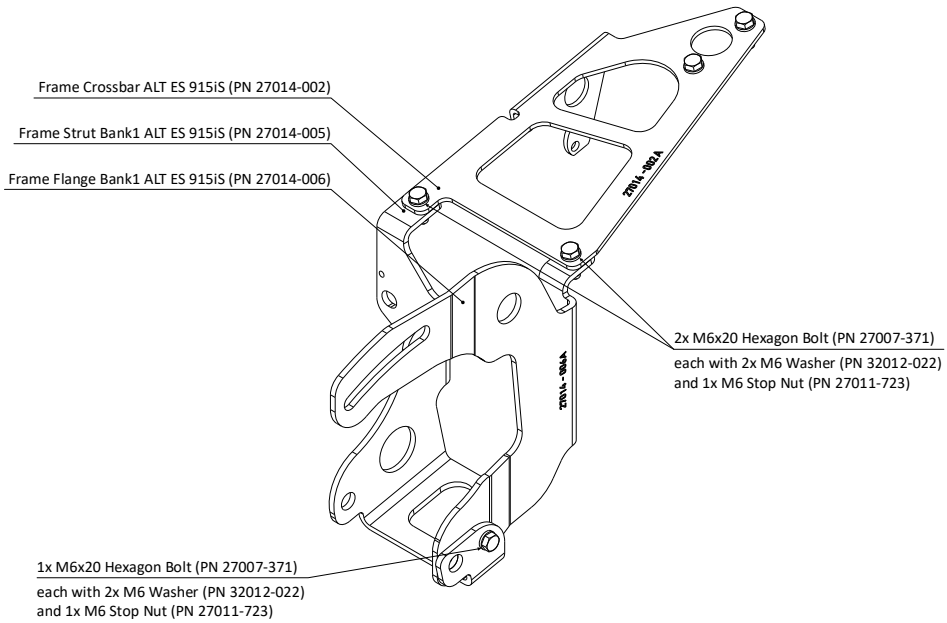

Figure 5-14: Isometric View Ext. Alternator Kit 70A Bank1 Rotax 916iS Frames

5.8 Assembly Instructions Ext. Double Alternator Kit 2x 70A Rotax 912iS

PN Alternator Kit: 12-323
PN Mounting Kit: 27005-871

1. Mount the **Frame Bracket ALT FLX/ES 912iS** (PN 26006-068) to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts. Do not tighten the bolts yet.
2. Mount the **Frame Flange ALT ES 912iS** (PN 26006-054) to the Rotax Attachment Points **L5** and **L6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
3. Mount the **Frame Strut ALT ES 912iS** (PN 26006-053) to the Rotax Attachment Point **L4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
4. Connect the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
5. Connect the **Frame Bracket ALT FLX/ES 912iS** (PN 26006-068) and the **Frame Strut ALT ES 912iS** (PN 26006-053) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
6. Place the **Frame Gusset Plate ALT ES 912iS/ULS** (PN 26006-079) between the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053) and connect it to the **Frame Strut ALT ES 912iS** (PN 26006-053) with 2x **M5x16 Hexagon Bolts** (PN 30004-103), 4x **M5 Washer** (PN 32010-005) and 2x **M5 Stop Nut** (PN 27011-724).
7. Mount the **Frame Bracket Bank1 ALT FLX/ES 912iS** (PN 27005-876) to the Rotax Attachment Points **GR1** and **GR2** with the pre-installed bolts. Do not tighten the bolts yet.
8. Mount the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) to the Rotax Attachment Points **R5** and **R6** with the pre-installed bolts and washers. Do not tighten the bolts yet.
9. Mount the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) to the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with 3x **M6x20 Hexagon Bolt** (PN 27007-371), 6x **M6 Washer** (PN 32012-022) and 3x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet. Connect the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) and the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) to the Rotax Attachment Point **R4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolts yet.
10. Connect the **Frame Bracket Bank1 ALT FLX/ES 912iS** (PN 27005-876) to the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) with 2x **M6x25 Hexagon Bolt** (PN 27011-825), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Do not tighten the bolts yet.
11. Mount the **Frame Gusset Plate Bank1 ALT ES 912iS** (27005-877) between the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) with 4x **M5x16 Hexagon Bolt** (PN 30004-103), 8x **M5 Washer** (PN 32010-005) and 4x **M5 Stop Nut** (PN 31500-005).
12. Mount the **Frame Crossbar ALT ES 912iS** (PN 27005-878) to the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Additionally mount it to the **Frame Flange ALT ES**

912iS (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053) with 1x **M6x25 Hexagon Bolt** (PN 27011-825), 2x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723), and to the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Gusset Plate ALT ES 912iS/ULS** (PN 26006-079) with 2x **M5x16 Hexagon Bolts** (PN 30004-103), 4x **M5 Washer** (PN 32010-005) and 2x **M5 Stop Nut** (PN 27011-724).

13. Tighten all bolts from steps 1-6 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut ALT ES 912iS** (PN 26006-053) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
14. Tighten all bolts from steps 7-12 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon** (PN 27011-731) against the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with safety wire. Secure the 2x pre-installed bolts on the Rotax Attachment Points **R5** and **R6** against each other with safety wire.
15. Place the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) behind the propeller flange. Place the 2x **Fixing Pulley** (PN 26001-870) between the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
16. Mount the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) on the 2x **Fixing Pulley** (PN 26001-870) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
17. Apply battery terminal grease on all connections between the alternator and the bearings.
18. Mount one **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053) by inserting 1x **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507), 1x **UNF 7/16”-20 Flat Nut** (PN 27007-506) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
19. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Pulley Engine 260mm 912iS/915iS** (PN 26003-252) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange ALT ES 912iS** (PN 26006-054) and the **Frame Strut ALT ES 912iS** (PN 26006-053).
20. Mount the other **Alternator ES-7024-14** (PN 26005-927) in between the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874) by inserting 1x **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507), 1x **UNF 7/16”-20 Flat Nut** (PN 27007-506) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
21. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) and the **Frame Strut Bank1 ALT ES 912iS** (PN 27005-874).
22. Mount one **V-Belt XPZ 962** (PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley on Bank 2 side and the other **V-Belt XPZ 962**

(PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley on Bank 1 side.

23. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley** (PN 26001-870) mounting holes.
24. Move the **Alternator ES-7024-14** (PN 26005-927) on Bank 2 side to tense the corresponding belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 912iS** (PN 26006-054) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
25. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1**.** Secure it against the **Frame Flange ALT ES 912iS** (PN 26006-054) with safety wire.
26. Tighten and torque the **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507) as specified in Table 4-1**.** Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
27. Move the **Alternator ES-7024-14** (PN 26005-927) on Bank 1 side to tense the corresponding belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) with 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
28. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange Bank1 ALT ES 912iS** (PN 27005-875) with safety wire.
29. Tighten and torque the **UNF 7/16”-20 x 4” Hexagon Bolt** (PN 27007-507) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
30. Thoroughly check the complete installation.

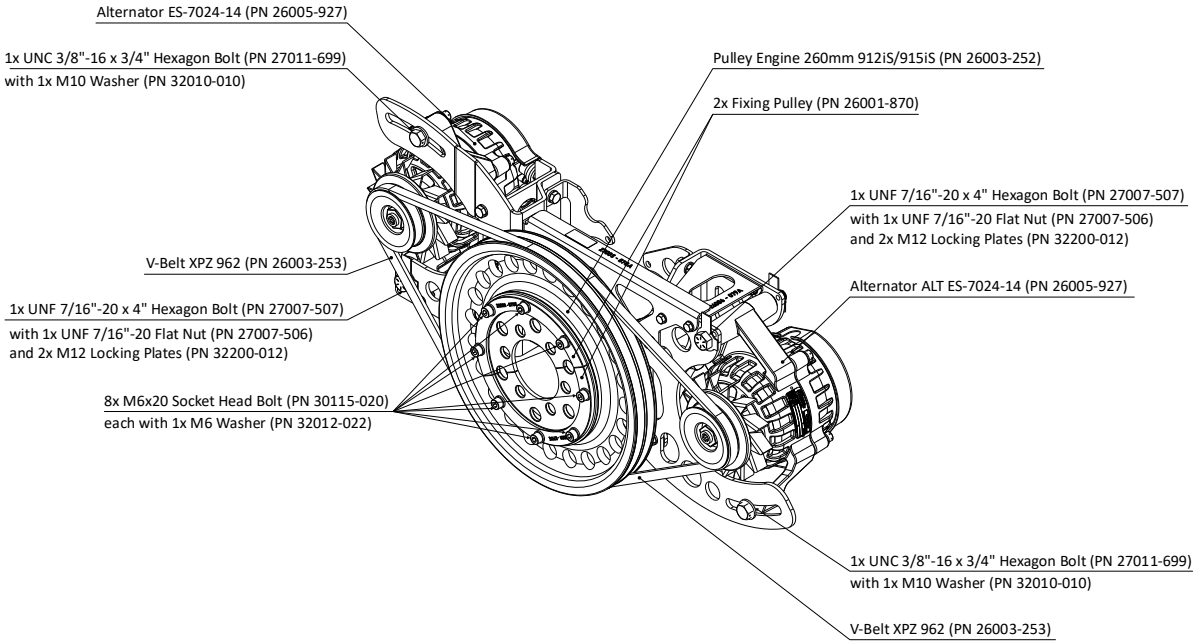

Figure 5-15: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 912iS

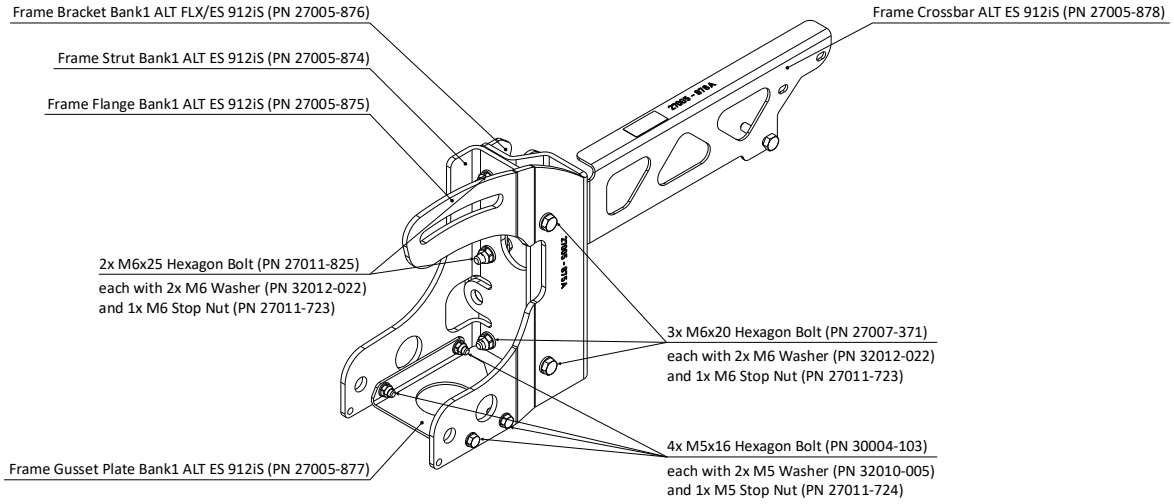

Figure 5-16: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 912iS Frames Bank1

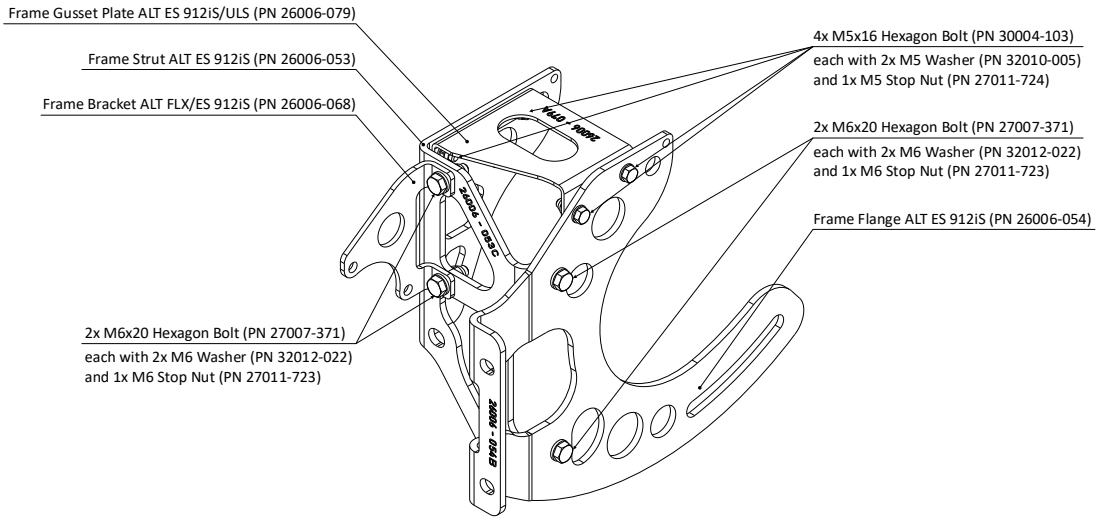

Figure 5-17: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 912iS Frames Bank2

5.9 Assembly Instructions Ext. Double Alternator Kit 2x 70A Rotax 915iS

PN Alternator Kit: 12-568
PN Mounting Kit: 27014-001

1. Mount the **Frame Flange ALT ES 915iS** (PN 27007-290) to the Rotax Attachment Points **L5** and **L6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
2. Mount the **Frame Strut ALT ES 915iS** (27007-288) to Rotax Attachment Point **L4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
3. Connect the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
4. Tighten all bolts from steps 1-5 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut ALT ES 915iS** (27007-288) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
5. Mount the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) to the Rotax Attachment Points R**5** and **R6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
6. Mount the **Frame Strut Bank1 ALT ES 915iS** (27014-005) to Rotax Attachment Point **R4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
7. Connect the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
8. Mount the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723), and to the **Frame Strut ALT ES 915iS** (27007-288) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Additionally connect the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts.
9. Tighten all bolts from steps 5-8 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
10. Place the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) behind the propeller flange. Place the 2x **Fixing Pulley** (PN 26001-870) between the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
11. Mount the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) on the 2x **Fixing Pulley** (PN 26001-870) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).
12. Apply battery terminal grease on all connections between the alternator and the bearings.

13. Mount one **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
14. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288).
15. Mount the other **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
16. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005).
17. Mount one **V-Belt XPZ 962** (PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley on Bank 2 side and the other **V-Belt XPZ 962** (PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley on Bank 1 side.
18. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley** (PN 26001-870) mounting holes.
19. Move the **Alternator ES-7024-14** (PN 26005-927) on Bank 2 side to tense the corresponding belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
20. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange ALT ES 915iS** (PN 27007-290) with safety wire.
21. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
22. Move the **Alternator ES-7024-14** (PN 26005-927) on Bank 1 side to tense the corresponding belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and

needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.

23. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with safety wire.
24. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
25. Thoroughly check the complete installation.

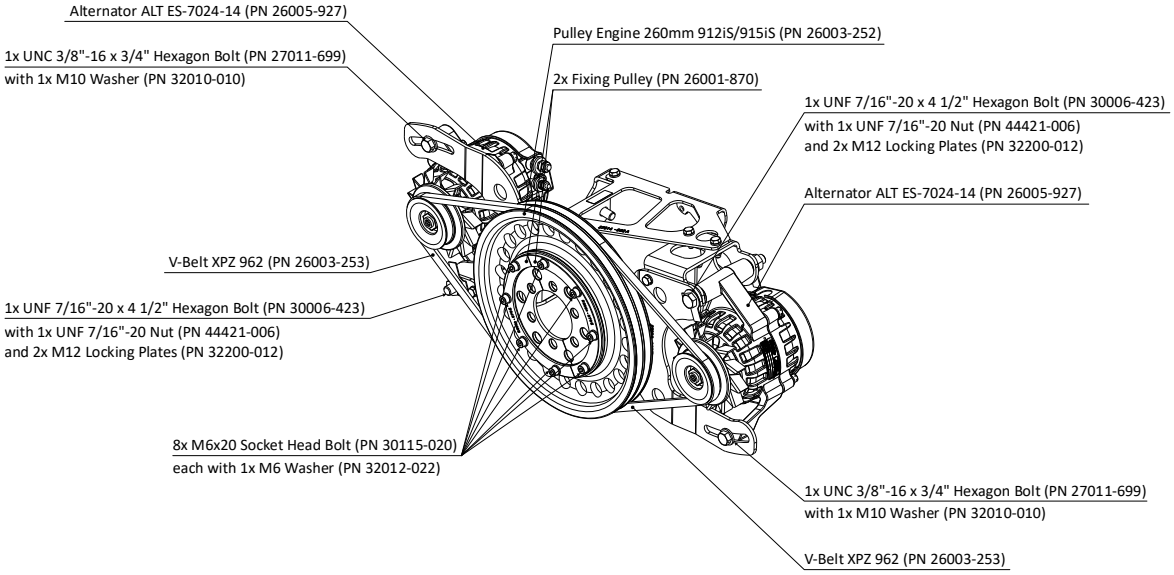

Figure 5-18: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 915iS

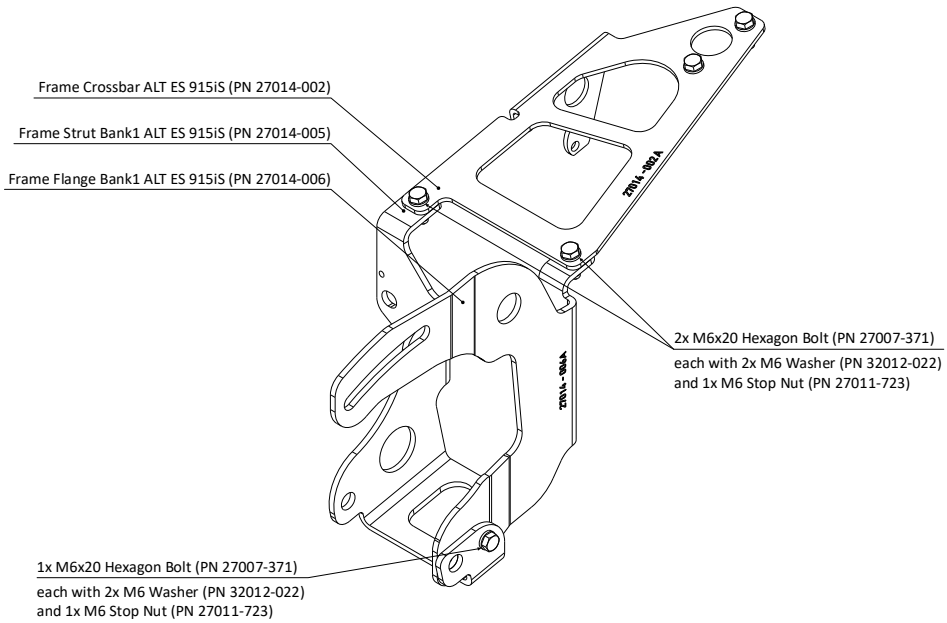

Figure 5-19: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 915iS Frames Bank1

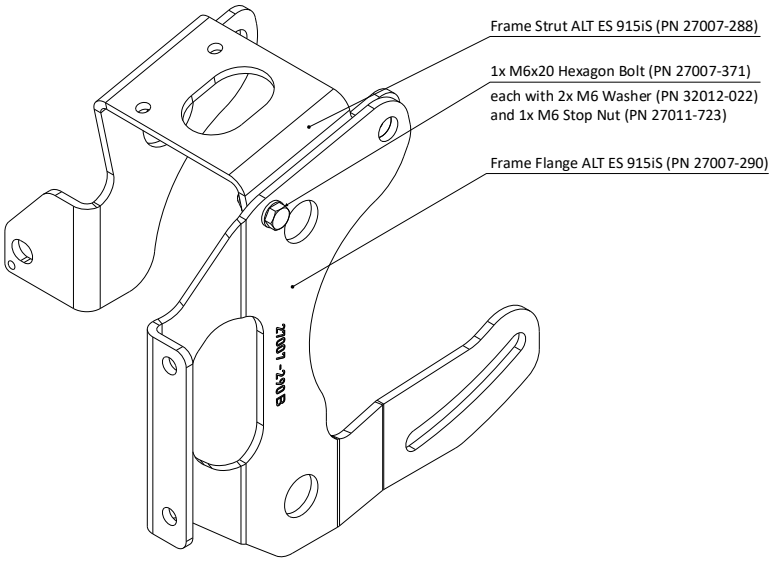

Figure 5-20: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 915iS Frames Bank2

5.10 Assembly Instructions Ext. Double Alternator Kit 2x 70A Rotax 916iS

PN Alternator Kit: 12-704
PN Mounting Kit: 27011-801

1. Mount the **Frame Flange ALT ES 915iS** (PN 27007-290) to the Rotax Attachment Points **L5** and **L6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
2. Mount the **Frame Strut ALT ES 915iS** (27007-288) to Rotax Attachment Point **L4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
3. Connect the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
4. Tighten all bolts from steps 1-5 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut ALT ES 915iS** (27007-288) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
5. Mount the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) to the Rotax Attachment Points R**5** and **R6** with 2x **M8x20 Hexagon Bolt** (PN 27011-729) and 2x **M8 Washer** (PN 32010-008). Do not tighten the bolts yet.
6. Mount the **Frame Strut Bank1 ALT ES 915iS** (27014-005) to Rotax Attachment Point **R4** with 1x **M10x20 Hexagon Bolt** (PN 27011-731) and 1x **M10 Washer** (PN 32010-010). Do not tighten the bolt yet.
7. Connect the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with 1x **M6x20 Hexagon Bolt** (PN 27007-371), 2x **M6 Washer** (PN 32012-022) and 1x **M6 Stop Nut** (PN 27011-723).
8. Mount the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723), and to the **Frame Strut ALT ES 915iS** (27007-288) with 2x **M6x20 Hexagon Bolt** (PN 27007-371), 4x **M6 Washer** (PN 32012-022) and 2x **M6 Stop Nut** (PN 27011-723). Additionally connect the **Frame Crossbar ALT ES 915iS** (PN 27014-002) to the Rotax Attachment Points **GL1** and **GL2** with the pre-installed bolts.
9. Tighten all bolts from steps 1-4 and torque them as specified in Table 4-1. Secure the **M10x20 Hexagon Bolt** (PN 27011-731) against the **Frame Strut Bank1 ALT ES 915iS** (27014-005) with safety wire. Secure the 2x **M8x20 Hexagon Bolt** (PN 27011-729) against each other with safety wire.
10. Place the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) behind the propeller flange. Place the 2x **Fixing Pulley 916iS** (PN 27005-829) between the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the propeller flange. The fixing pulleys can be temporarily secured with 2x M10 bolts and 2x M10 nuts (not included) until the propeller is installed.
11. Mount the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) on the 2x **Fixing Pulley 916iS** (PN 27005-829) with 8x **M6x20 Socket Head Bolt** (PN 30115-020) and 8x **M6 Washer** (PN 32012-022). Apply Loctite 243 on all 8x **M6x20 Socket Head Bolt** (PN 30115-020).

12. Apply battery terminal grease on all connections between the alternator and the bearings.
13. Mount one **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
14. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange ALT ES 915iS** (PN 27007-290) and the **Frame Strut ALT ES 915iS** (27007-288).
15. Mount the other **Alternator ES-7024-14** (PN 26005-927) between the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005) by inserting 1x **UNF 7/16”-20 x4 ½” Hexagon Bolt** (PN 30006-423), 1x **UNF 7/16”-20 Nut** (PN 44421-006) and 2x **M12 Locking Plates** (PN 32200-012) through the pivot hole of the alternator. Do not tighten the bolt yet.
16. Adjust the position in x-direction between the **Alternator ES-7024-14** (PN 26005-927) and the frames using the **Shim Set Alternator** (PN 12-542). Ensure that the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley are in the same plane for proper belt alignment. The assembly needs to fit tight between the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) and the **Frame Strut Bank1 ALT ES 915iS** (27014-005).
17. Mount one **V-Belt XPZ 962** (PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley on Bank 2 side and the other **V-Belt XPZ 962** (PN 26003-253) on the **Double-Pulley Engine 260mm 912iS/915iS** (PN 26007-312) and the pre-mounted pulley on Bank 1 side.
18. Mount the propeller as described in the propeller manual. The propeller bolts must be inserted through both the Rotax propeller shaft holes and the **Fixing Pulley 916iS** (PN 27005-829) mounting holes.
19. Move the **Alternator ES-7024-14** (PN 26005-927) on Bank 2 side to tense the corresponding belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.
20. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange ALT ES 915iS** (PN 27007-290) with safety wire.
21. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
22. Move the **Alternator ES-7024-14** (PN 26005-927) on Bank 1 side to tense the corresponding belt. Fix the position by inserting 1x **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) and 1x **M10 Washer** (PN 32010-010) through the slot of the **Frame Flange ALT ES 915iS** (PN 27007-290) into the adjusting hole of the alternator. The belt will soften during the first few runs and

needs to be retightened. Use the **Shim Set Alternator** (PN 12-542) to align the alternator to the frames.

23. Tighten and torque the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) as specified in Table 4-1. Secure it against the **Frame Flange Bank1 ALT ES 915iS** (PN 27014-006) with safety wire.
24. Tighten and torque the **UNF 7/16”-20 x 4 ½” Hexagon Bolt** (PN 30006-423) as specified in Table 4-1. Bend the edges of the **M12 Locking Plates** (PN 32200-012) according to usual procedure to secure them.
25. Thoroughly check the complete installation.

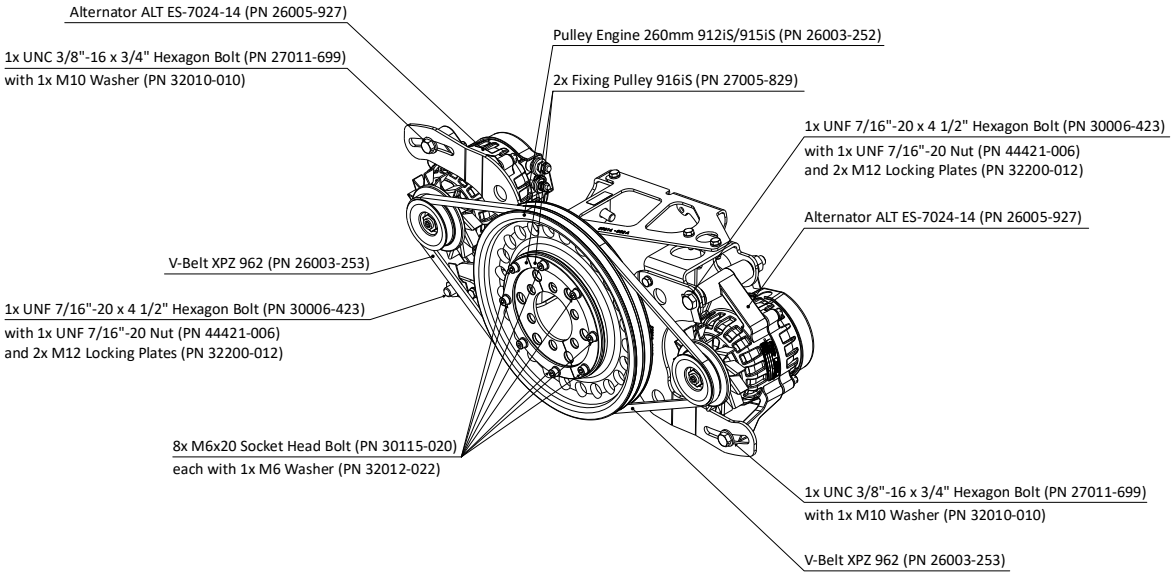

Figure 5-21: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 916iS

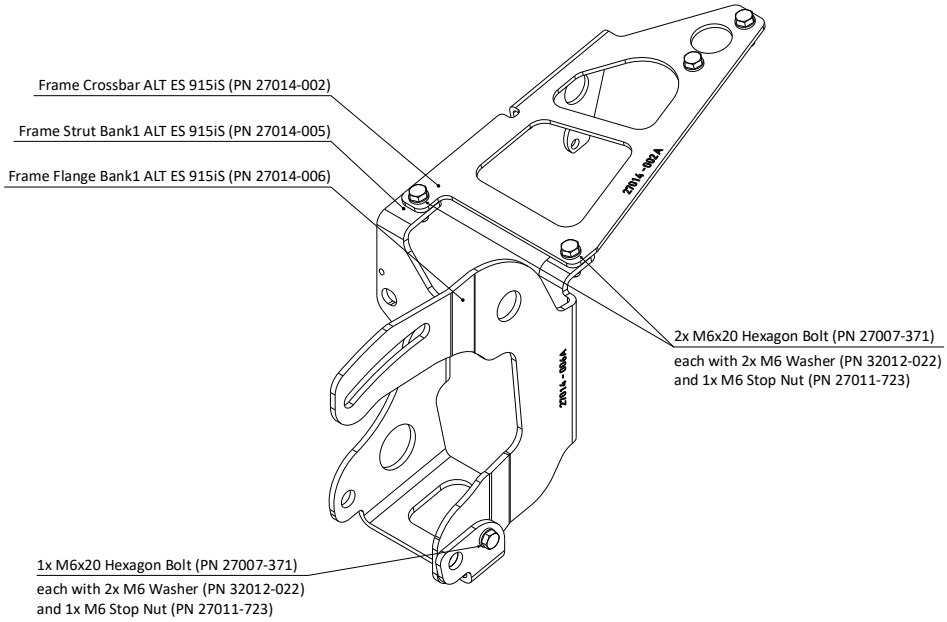

Figure 5-22: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 916iS Frames Bank1

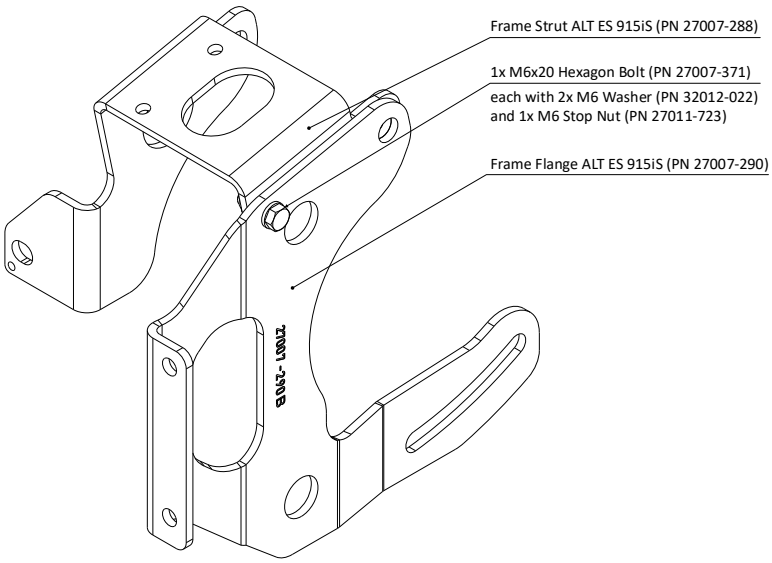

Figure 5-23: Isometric View Ext. Double Alternator Kit 2x 70A Rotax 916iS Frames Bank2

6. Electrical Installation and Operation

6.1 Electrical Installation Alternators 70A

The Alternator 70A must be installed with an R1224 Regulator as seen in **Figure 6-4** for single alternator use or in **Figure 6-5** for double alternator use. In dual-use operation, both alternators are available simultaneously to power the aircraft electrical bus. The load-sharing circuitry ensures that the electrical demand is distributed between the two 70 A alternators, while either alternator is capable of supporting essential loads in the event of a failure of the other unit.

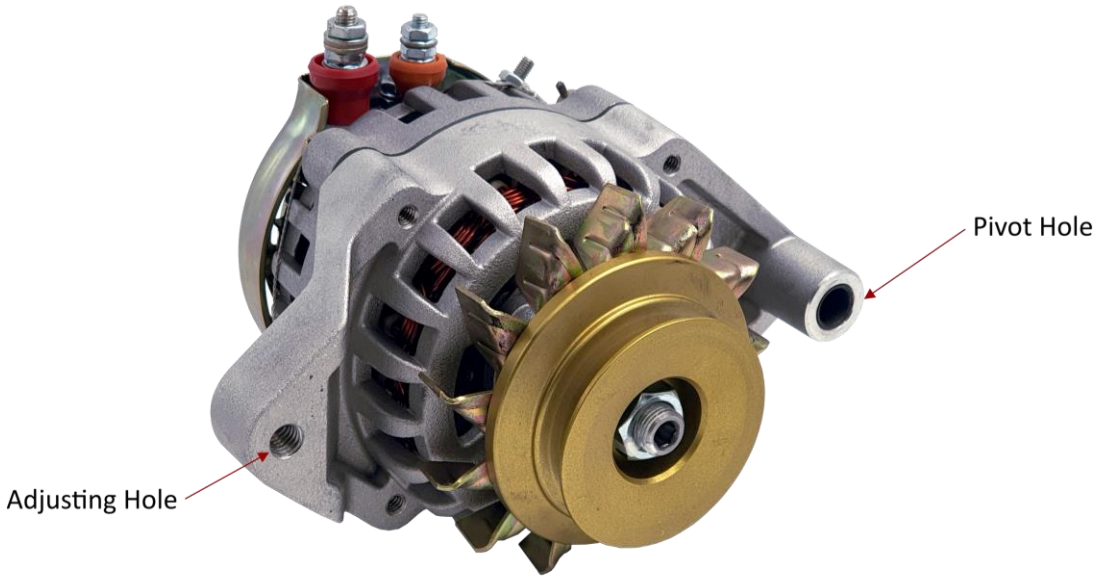

Figure 6-1 : Mechanical Connection Points Alternator 70A

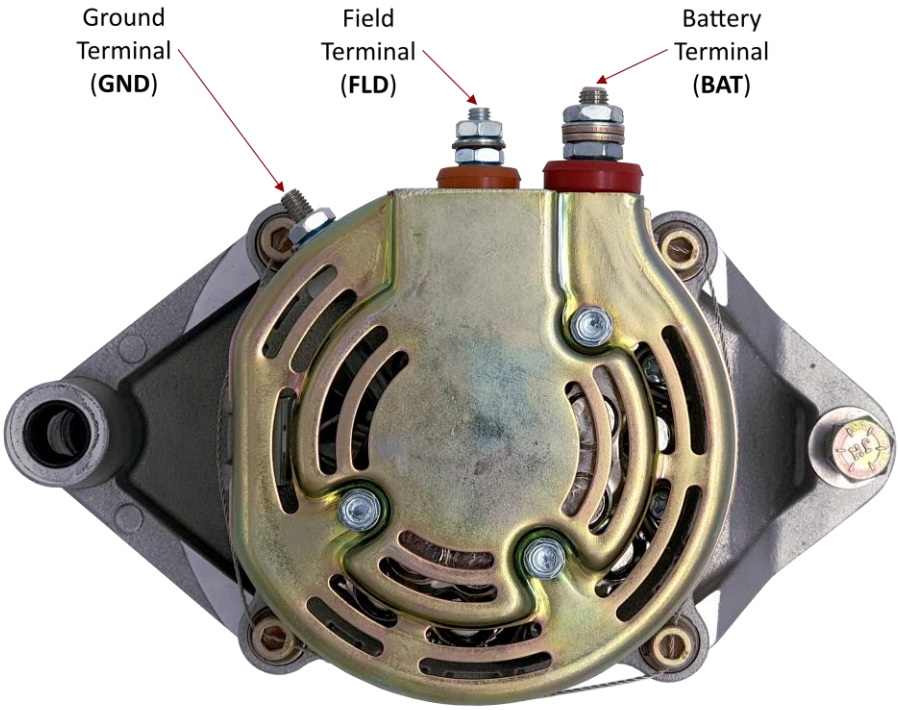

Figure 6-2 : Electrical Connection Points Alternator 70A

Description	Recommended connector	Torque Value (US)	Torque Value (SI)
Ground Nut	Ring terminal mount M6	bottom: 25-30 in-lbs top: 20-25 in-lbs	bottom: 2.82-3.39 Nm top: 2.26-2.82 Nm
Battery Nut	Ring terminal mount M5	bottom: 15-20 in-lbs top: 20-25 in-lbs	bottom: 1.69-2.26 Nm top: 2.26-2.82 Nm
Aux Nut	Ring terminal mount M5	bottom: 14-16 in-lbs top: 20-30 in-lbs	bottom: 1.58-1.81 Nm top: 2.26-3.39 Nm

Table 6-1 connector information Alternator 70A

6.2 R1224 Regulator Installation

Mechanical dimensions: 120 mm x 70 mm x 24 mm
Weight: 257 g

For wiring check Chapter 6.3.

For more information about the R1224 see Plane Power Document – R1224 Regulator Installation Instructions.

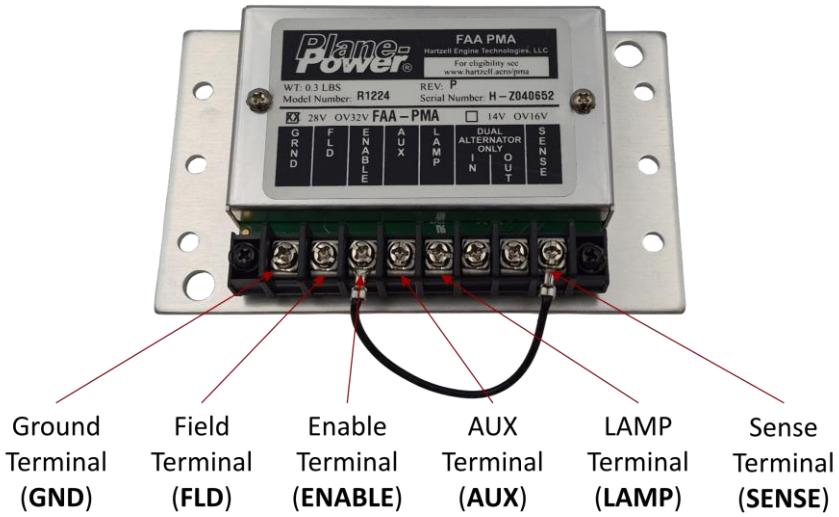

Figure 6-3: R1224 Regulator

6.3 Wiring diagrams

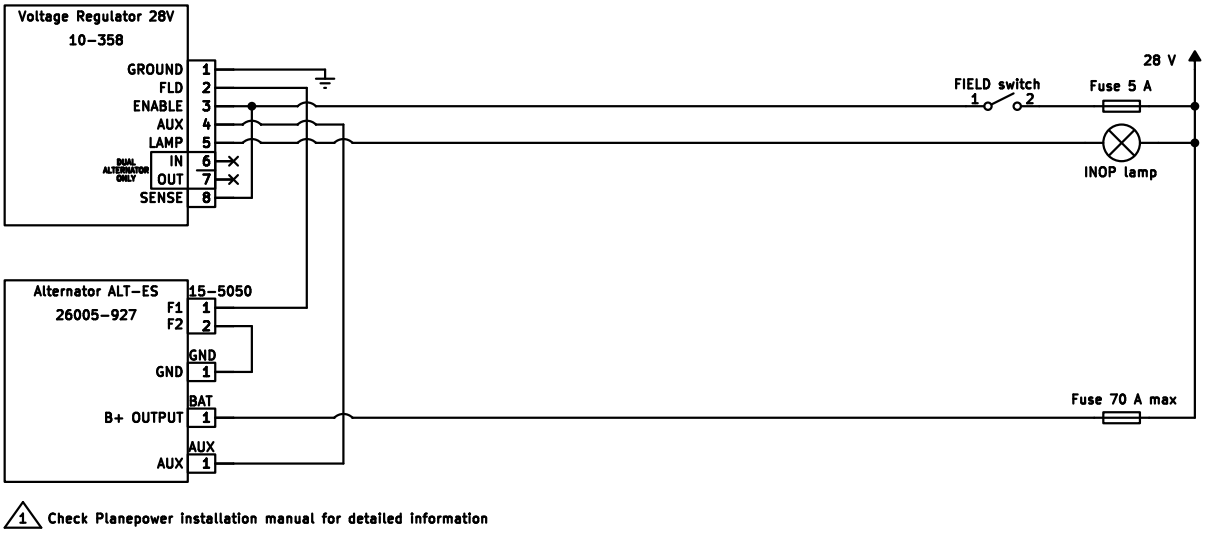

Figure 6-4 : Wiring Diagram Single Alternator 70A

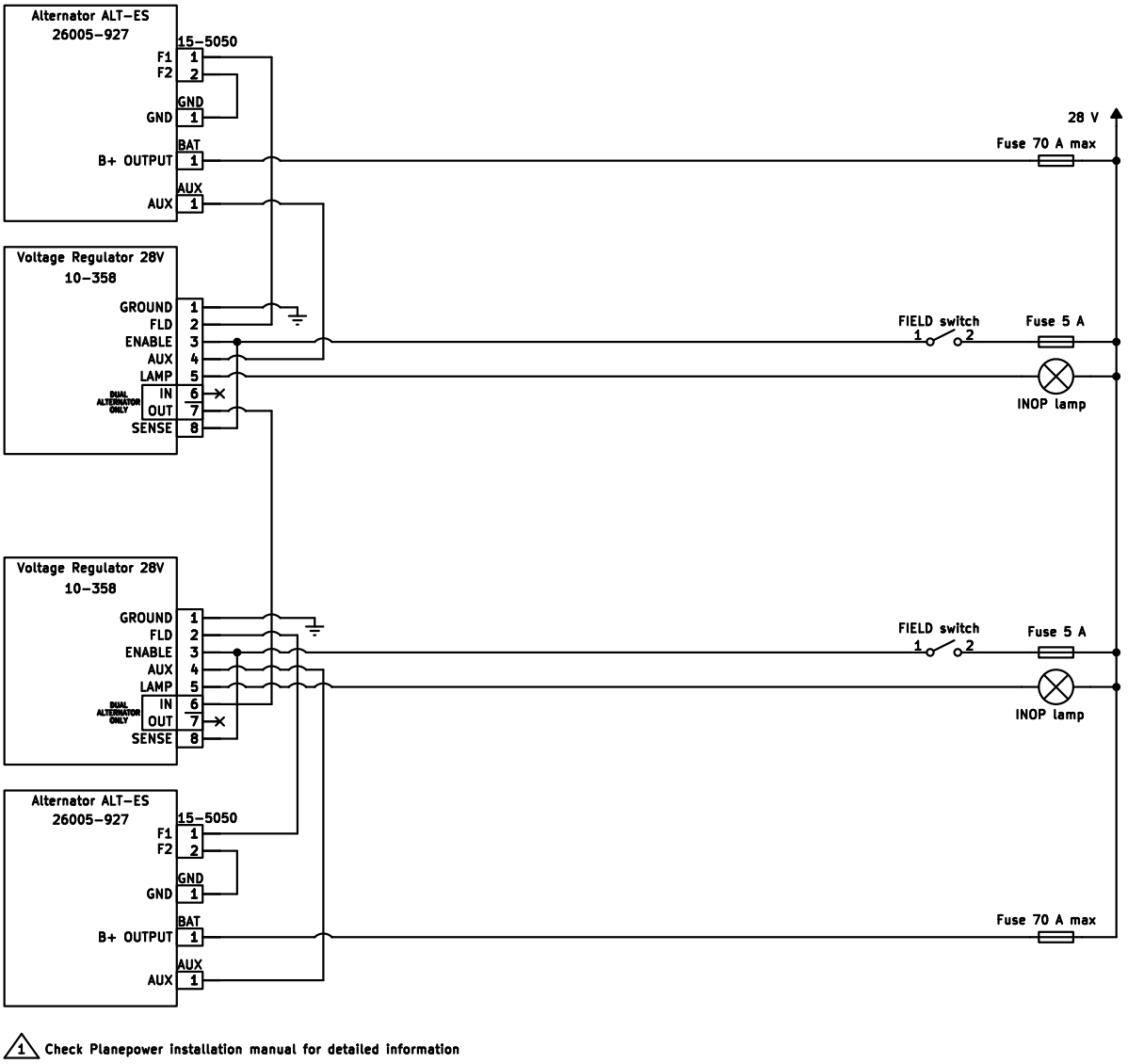

Figure 6-5 Wiring Diagram Double Alternator 2x 70A

7. Belt Tensioning

Tension the belt to the required value of 233 N.

To check if the belt has the required tension, use the **OPTIKRIK Optibelt V-Belt Tension Gauge** (PN 12-295) or the Optibelt TT Frequency measuring device. If the required value is not reached, loosen the **UNC 3/8”-16 x 3/4” Hexagon Bolt** (PN 27011-699) to retighten the belt and measure again.

8. Performance Charts

8.1 Performance Chart Ext. Alternator Kit 70A Rotax 912iS

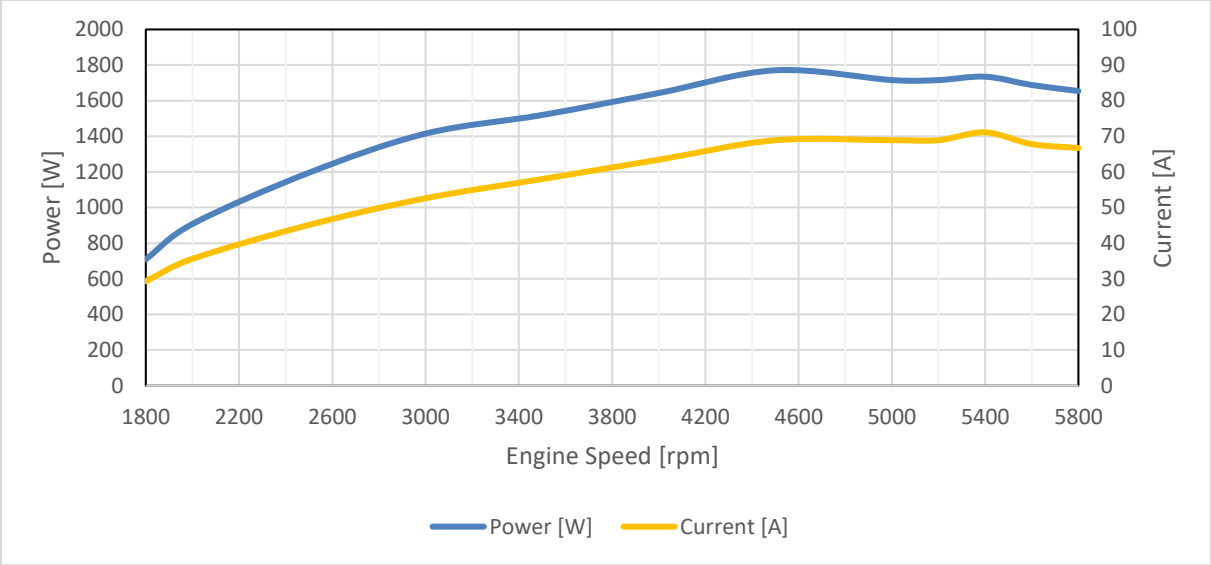

Figure 8-1 : Performance over Engine Speed 70A Rotax 912iS

8.2 Performance Chart Ext. Alternator Kit 70A Rotax 915iS

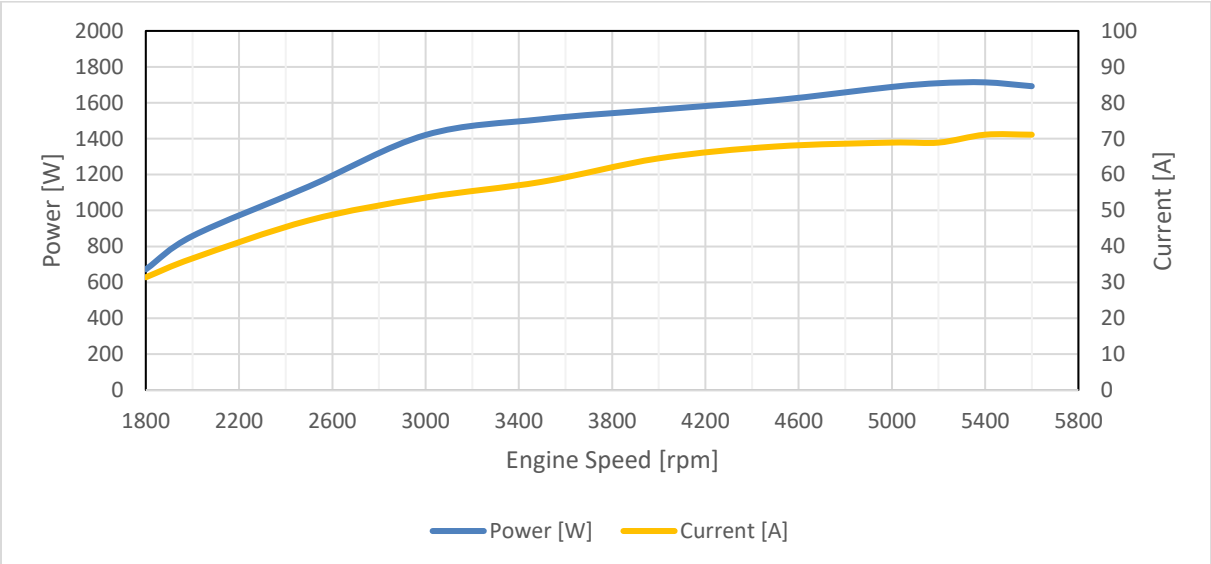

Figure 8-2 : Performance over Engine Speed 70A Rotax 915iS

End of Document.

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